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ORIGINAL ARTICLES

WHAT CONSTITUTES NEGLIGENCE?*

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A few years ago, in discussing the question of negligence in its relation to medicine, a physician of considerable experience made the statement that, in his opinion, one-half of all the mistakes which occur in the practice of medicine were due to negligence. This seems incredible at first thought, but perhaps it is not wide of the mark. If any large per cent. of errors in practice occur from negligence or carelessness, then it is reasonable to suppose that negligence will be the cause of many damage suits for malpractice, and we can not but say justifiably so. This is not all presumption, for court reports show that a large number of cases instituted against physicians for malpractice are based on negligence either in part or in whole.

In reviewing decisions from any considerable number of malpractice suits against physicians, it will be noted at once that negligence in some form is the basis of a very large per cent. of all the cases. It is true that many of these suits are not brought on one charge alone, but in a large number of cases negligence is the only charge, and in many other suits negligence is one of the several charges. Again, it will be noted that where judgment has been rendered against physicians negligence has been the charge sustained in a large per cent. of all the malpractice cases. The law says in regard to physicians that they must possess ordinary knowledge, ordinary skill and ability, and that they must use ordinary care and diligence. Hence we presume that anything less than ordinary care must be negligence. This presumption is undoubtedly true.

This only brings up the question, Under what laws are physicians to be holden? Before statute law was written the common law obtained and is still observed where statute law does not govern. In fact, the old common law was the basis of most statute law. The common law was perhaps in many ways more flexible than statute law; hence in many cases physicians were held to a stricter account than justice demanded. The general principles of law governing physicians are much the same

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as those governing other callings that demand special skill and knowledge.

Popular opinion, however, is inclined to enforce on physicians a stricter rule than that which is laid on other professions, and in some instances eminent jurists have coincided with this opinion. Fortunately in recent years our courts in most instances have not exacted more from us than they would exact from another profession in which special skill and knowledge is essential. Skill and care, when relating to the practice of medicine, are so closely related, especially when negligence is charged, that a consideration of both is here necessary. Men in our profession, by offering their services to the public, impliedly contract that they possess ordinary skill and knowledge, and this means the ordinary skill and knowledge possessed by the ordinary practitioner, located in the same neighborhood and engaged in the same line of work.

Justice Story says that in all these cases where skill is required it is to be understood that it means ordinary skill, for he is not presumed to engage for extraordinary skill or for extraordinary endowments or acquirements. Lord Chief Justice Tindall says every person who enters into a learned profession undertakes to bring to the exercise of it a reasonable, fair and competent degree of skill. The common law always held to this rule and but few jurists have ever held otherwise.

It is fair to presume, and jurists agree on this point, that the amount of skill, knowledge and care exercised in one section of the country might not at all be sufficient in another section. A physician residing in a sparsely settled country, his practice extending over a wide territory, and his opportunities for clinical observation and study limited, is not required to exercise the same amount of care as is the physician who is located in a large densely populated city, where medical libraries are of easy access and where medical education has every opportunity to flourish, nor is he required to exhibit the same degree of skill or knowledge. From all this, then, we see that care is enjoined and negligence is forbidden. What, then, constitutes negligence?

Negligence in correct legal phraseology, said a jurist, is very nearly synonymous with carelessness and signifies the want of care, caution, attention, diligence or discretion in one having no intention of committing an injury. It is a violation of the obligation which enjoins care and caution. Even when gross, the negligence is but an omission of duty.

Another legal authority says negligence is the omission to do something which a reasonable man, guided by those considerations which ordinarily regulate the conduct of human affairs, would do, or doing something which a prudent man would not do. In the decision of a case occurring in this state a few years ago, the judge, in his review, said: "A party is not negligent if he uses all the skill and diligence which can be attained by reasonable means and is not responsible for failure."

McClelland says, strictly speaking, the term is limited in its application to carelessness in the performance of professional duty. Carelessness is its proper synonym. Duties performed without care, caution, attention, diligence, skill, prudence or judgment are negligently performed. Acts

are so designated that are performed by one heedlessly, even where there is no purpose to omit the performance of duty. It is non-feasance, not malfeasance. It is the omitting to do, and not the ill-doing, this last being a want of skill. The same authority says the surgeon must not perform serious operations and leave the staunching of the hemorrhage to the patient and unskilled attendant. Nor must the obstetrician abandon his lying-in patient while in convulsions, nor after her delivery until the placenta is removed and all danger from postpartum hemorrhage is passed in one liable to this accident. The law implies that in the treatment of all cases which they undertake physicians will exercise reasonable and ordinary skill and diligence.

Another eminent justice says of physicians that they are also bound always to use their best skill and judgment in determining the nature of the malady and the best mode of treatment, and in all respects to do their best to secure a perfect restoration of their patients to health and soundness. This opinion allows but little latitude for carelessness or negligence and would seem to hold the physician to a strict account. After he has used his best skill and judgment in determining the nature of the malady and the best mode of treatment for it, he may still fail to secure a perfect restoration, and, even though he has done his best, he may be accused of neglect or lack of skill, because of such failure, and this was taken into consideration in the case of Patten vs. Wiggin (51 Maine, 594), when the magistrate, in summing up, said: "But physicians and surgeons do not impliedly warrant the recovery of their patients and are not liable on account of any failure in that respect unless through some default of their own duty." Bad results which are or may be the result of negligence are not always due to the negligence of the doctor, although he may be charged for them, and sometimes is held for the negligence of others under certain circumstances.

Concurring or contributary negligence arises when both physician and patient contribute to produce the injury complained of. The verdicts of these cases vary somewhat; it is difficult sometimes for the doctor to prove that the bad result was caused by the patient's negligence more than by his own. In the case of Wilmot vs. Howard, wherein the defendant was sued for lack of skill in reducing a fracture of the plaintiff's arm and for negligence in caring for it afterward, it was shown conclusively that the plaintiff was to return to the defendant's office at certain dates for inspection and further treatment, if needed, which he did not do. It was shown, too, that the defendant saw the plaintiff but once after the time of reducing the fracture. It was shown by the plaintiff that the splints and dressings were not skilfully applied, the result was not good and there was much pain and distress. The jury was instructed fully and no exceptions were made to these instructions, except so far as they related to the degree of knowledge and skill a surgeon should possess. The jury returned a verdict for the plaintiff.

Elwell says the patient may be negligent to a certain extent and yet the physician has been so negligent that ordinary care on the part of the patient would not have prevented the unfortunate result and the patient

will recover. In support of this he cites the cases of Clark vs. Kerwin—Parker vs. Adams (12 Metcalf, 417), Chaub vs. Porter (9 Minn., 260) and others.

In the case of Berge vs. Gardiner (19 Conn., 507) where contributory negligence was charged, the judge, in his decision, said: "Though a physician may be guilty of culpable negligence, yet if his act was not wanton and intentional and the patient essentially contributed to produce the results, he can not recover."

Again, we find cases arising against physicians for the negligence of those working under their direction, such as assistants, nurses or medical students. The Supreme Court of Minnesota recently had a hearing before it where a physician had been sued for negligence. The patient, while still under the influence of anesthetics, was burned on the leg by a hot water bottle which had been placed in the bed by a nurse. There was a verdict for the defendant. This seems to be a rather frequent occurrence.

In 1906 the Supreme Court of Louisiana heard a case in which three physicians were sued for the negligent or careless act of a nurse who dropped alcohol in a patient's eye instead of medicine. While there was no permanent damage and but little temporary disturbance, yet there was a verdict rendered against one of the defendants who was the owner of the sanitarium in which the patient was treated. The other two defendants who were not owners of the institution were not held. Another case of interest here is that of Awde vs. Cole and another tried in the courts of Minnesota which was an action to recover damage for alleged negligence on the part of defendant physician, first, in the diagnosis of appendicitis, in the performance of the actual operation and in the subsequent care of the wound; second, in burning the plaintiff's leg after the operation and in the subsequent treatment of that burn. The jury returned a general verdict for the plaintiff and special verdicts finding that the defendants were not negligent in the performance of the operation or in the subsequent treatment of the wound, and that the nurse who put a hot stone in the bed which caused the burn of the plaintiff was a servant of the plaintiff and not of the defendants, and at the time the plaintiff received the burns on the leg we believe the defendants were responsible for the actions of the nurse. The Supreme Court held there was error and granted the defendants permission to apply to the trial court for a new trial or judgment.

Charges of negligence are brought more frequently in certain classes of cases. In a series of fifty-two suits for malpractice against physicians, negligence entered into the charge of thirty-seven. Of the thirty-seven suits in which negligence was charged, sixteen were fractures or dislocations, nine were surgical, three were *x*-ray burns and three for errors of nurses. Two were for operations beyond that to which the patient had consented, one for a faulty diagnosis and one for a faulty anesthetic. Out of the entire fifty-two cases, judgments against the physicians were rendered in twenty-two. Out of the thirty-seven cases in which negligence entered as a charge, judgments were entered against the physicians

in seventeen. This series of cases was tabulated from *The Journal* of the American Medical Association and were reported during and since 1902.

In tabulating the cases handled by the Medicolegal Committee of the Chicago Medical Society, we have a slightly different result. We notice the fashions are changing somewhat. Out of eighty-four suits, or threatened suits, negligence entered into the charge of fifty-two.

Of the fifty-two suits, or threatened suits, in which negligence was the charge, or a part of it, eight were brought for fracture cases, twelve were for surgical cases, ten were for obstetrical cases, seven were *x*-ray burns, ten were for medical cases and three were for faulty anesthetics and one for abortion. It seems to be quite the thing to find fault with the obstetrician. In none of these cases have judgments been secured, but some of them are still pending. In reading the literature of these cases it will be noticed that lack of attention to the patients is responsible for the charge. In the case of Bowman vs. Greene the proceedings were against a physician for malpractice in an obstetrical case. The testimony showed that thirty-six hours after delivery a second physician was called, at which time the placenta had not been removed and the bladder had not been evacuated since parturition. The witness, who was the second physician called, gave it as his opinion that the placenta and distension of the bladder should have been removed earlier and that it was negligent not to have done so, and upon this testimony a verdict for the plaintiff was returned from the lower court, but this was reversed by the Supreme Court for error.

Malpractice suits for negligent treatment of confinements seem to be increasing. Those cases followed by sepsis are especially liable to cause trouble for the doctor. Recently testimony was offered against a physician for not having used a scrubbing brush in the sterilization of his hands, and that his linen was not changed sufficiently often during the time of his attendance on the patient. The laity are beginning to know that asepsis is required and they demand it.

Any imperfect result of a fracture is liable to bring against the physician the charge of negligence and lack of skill. In the case of Smother vs. Hanks the charge was negligent, ignorant and unskilful treatment of the plaintiff's arm, the bones of which had been fractured near the wrist. The result was not perfect. The arm and fingers were crooked and stiff, perhaps permanently so, perhaps not. At the first trial the plaintiff secured a verdict for $2,000. At a new trial this was reduced to $1,200. At the third trial the verdict was reversed because of an error in the instructions to the jury of the preceding trial.

Just what is ordinary care or what becomes negligence is usually a question for the jury to decide, but it is certain they are more likely to favor the physician if he has seen his patient frequently and it is evident that he has tried to do his best for that patient. Physicians do not visit their patients frequently enough. If patients are left alone for a few days and something unusual occurs, they immediately think the doctor has been negligent and frequently courts are of the same opinion.

The law is fair with us. It does not demand unusual acquirements, neither does it demand perfect results, but it does not tolerate negligence. When we learn to look at the question from the standpoint of the law as well as from the standpoint of medicine, we will have discouraged many charges of malpractice.

DEGREE OF SKILL REQUIRED OF A PHYSICIAN.*

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Fortunately for us as a profession, the degree of skill required of physicians has been defined by the law in a manner that is plain and definite, and I feel that we have no just cause for complaint as regards the construction of the law as given to us in many decisions.

In the beginning I want to give due credit to two works I have consulted in preparing this paper: Hamilton's Legal Medicine and the Brochure sent out by the Arlington Chemical Works, New York, entitled "The Law and the Doctor." The latter has condensed the matter in such a manner that I have found it an invaluable aid.

When a doctor accepts a case, the law says he contracts to furnish certain things:

First.—That he will bring to that case a reasonable degree of skill and learning.

Second.—That in the treatment of that case he will use reasonable and ordinary care and diligence.

Third.—If there be room for doubt, he will use his best judgment.

A breach of this contract in any particular constitutes malpractice.

The question naturally arises, "What is a reasonable degree of skill and learning?" The legal decisions all hold that we are not required to have the "highest" degree of skill, to be "thoroughly" educated, but that "proper," "reasonable," "ordinary" knowledge and skill are required. I might quote what our own Justice Craig said in the case of Barnes vs. Means, 82 Ill., 379:

"The law requires appellants, who hold themselves out to the public as physicians and surgeons, to possess, and in their practice use, ordinary skill in their profession. While perhaps they would not be required to possess that high degree of skill which the most learned might acquire in the profession, yet they are bound to have, and in their practice use, that degree of skill which is ordinarily possessed by physicians in practice."

To my mind, the word "ordinary" in all these decisions is the most valuable. It simply means that the skill required of me is the skill used ordinarily by doctors in similar localities. The law says a country doctor should not be expected to possess the skill that city surgeons possess. I will quote from the instructions which the judge gave in the case of Small vs. Howard, 128 Mass., 131:

"The defendant, undertaking to practice as a physician and surgeon in a town of comparatively small population, was bound to possess that

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skill only which physicians and surgeons of ordinary ability and skill, practicing in similar localities, with the opportunities for no larger experience, ordinarily possess, and he was not bound to possess that high degree of art and skill possessed by eminent surgeons practicing in large cities and making a specialty of the practice of surgery."

It would not be right to say the degree of skill I must use is the degree of skill used by my competitor, for my competitors might be illiterate quacks. Mr. Justice Worden, in the case of Gramm vs. Boener, 56 Ind., 497, says: "There might be but a few practicing in the given locality, all of whom might be quacks, ignorant pretenders to the knowledge not possessed by them, and it would not do to say that, because one possessed and exercised as much skill as the others, he could not be chargeable with the want of reasonable skill."

The rule, in its most generally accepted form, is that the skill and learning required of physicians is that "which physicians and surgeons practicing in similar localities possess."

This brings us face to face with the fact that we must not depart from recognized remedies and methods of treatment. If we do, we do so at our own peril. This fact would seem to retard progress, but the truth is we are not liable unless our departure has been unduly radical and has resulted in positive harm to the patient, and the harm must be positively proven.

Hamilton says: "Condemnation of experimental treatment, strictly speaking (for all treatment is more or less experimental in a general sense), may be carried so far as to constitute a serious bar to progress in medical science. An experiment is not always to be regarded as culpable of itself, for the reason that there is not, nor can there ever be, a legal code containing the rules of medical science. On the contrary, the thoughtful and scientific physician will always endeavor to individualize each case in its own treatment and proceed in accordance with the dictates of his own judgment. He is, therefore, often justified in acting in opposition to established rules. Progress in medical science depends upon independent research and the free selection of methods of procedure. Therefore, not even an untoward result of a course of treatment differing from that which is ordinarily pursued need necessarily, as has been assumed, be construed as malpractice. Even good results do not always protect the surgeon against reproach. A new and, therefore, untried procedure may, despite the fact that the patient died in consequence of its employment, be regarded as reasonable and justifiable.

"This is just as true as the proposition that a standard operative procedure in which all the rules laid down by authorities are followed frequently fails to save the patient, and may even be directly held responsible for his death. If the surgeon is able to give such reasons for his course as are satisfactory to scientific men, and has employed the new procedure with the care and due attention to all of the possibilities in the case, and in good faith, then he is not to be mulcted in damages because of an unfortunate outcome of his effort to improve upon older and probably not more satisfactory methods."

The Supreme Court of Maine holds on this question, Patten vs. Wiggins, 51 Maine, 594, that "if the case is such that no physician of ordinary knowledge or skill would hesitate, and but one course of treatment would by such professional men be suggested, then any other course of treatment might be evidence of a want of ordinary knowledge or skill, or care and attention, or exercise of his best judgment, and the physician might be held liable, however high his reputation."

The law requires more skill from a specialist than it does from a general practitioner. The law defines a specialist as a physician or surgeon who applies himself to the study and practice of some particular branch of the profession. Being employed because of his peculiar knowledge and skill in that branch, it would be fair to expect more from him than from one in general work. In the case of Baker vs. Hancock, Ind. App., 63 N. E. Rep., 323, Justice Roby says: "If he possesses no greater skill in the line of his specialty than the average physician, then there should be no reason for his employment; possessing such additional skill, it becomes his duty to give his patients the benefit of it."

The results obtained in a given case is not proof of skill or lack of skill. Hamilton says: "To the fair and impartial mind it is easily apparent that, until medicine becomes an exact science, in a certain proportion of cases failure must follow the efforts of the best informed men, the failure being attributable to the conditions for which the treatment was applied as well as to errors of judgment on the part of the practitioner. The errors, however, need not necessarily be culpable, *a priori*, as surgeons are but human and are liable to error in common with others of the race."

It, therefore, follows that, while the surgeon is bound to give his patients the benefit of his best judgment, he is not liable for a mere error of judgment, unless it can be shown that the latter is so gross as to be inconsistent with reasonable care, skill and diligence.

The employment of a surgeon does not, in the legal sense, imply a contract to cure. Many decisions have been given on this fact in Kansas, Michigan, Minnesota, Nebraska, New Hampshire and Ohio, so we can feel that we have ample protection, no matter how disastrous the results may have been, provided we have used ordinary skill and diligence.

THE LEGAL STATUS OF THE DOCTOR'S FEE; WHAT HE SHOULD DO WHEN THE PATIENT IS DISSATISFIED, AND WHEN THE PATIENT SUES FOR MALPRACTICE.*

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The doctor's fee for services rendered to an individual or corporation has the same standing in law as that of any other claim. The amount to be charged for a given professional service is a question of locality and regulated by the profession of the locality. This is usually conceded by the courts, although the court or jury sometimes expresses an opinion as

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to whether the amount charged for services is seemingly exorbitant or not. The wife and husband are jointly liable for family expenses, and medical services are so considered by the court. The one calling a doctor does not necessarily assume the responsibility for his fee. The one receiving the benefit of the doctor's services (unless a minor or dependent) is the one whom the law says is expected to pay the doctor for said services. In the event of a claim against an estate the doctor's fee for services during last illness is placed in the fifth class, four classes of claims having precedence over his.

WHAT HE SHOULD DO WHEN THE PATIENT IS DISSATISFIED.

Go back of this question. Why is the patient dissatisfied? Dissatisfactions arise from misunderstandings. Misunderstandings from neglect and inattention. Never permit a patient to become dissatisfied. He who tries to please and satisfy every one makes himself artificial and does so at the sacrifice of professional dignity and self-esteem. Dissatisfaction with a physician's services usually arise from:

1. Results that are not satisfactory to the patient. Conditions not as were expected or desired.

2. Charges or fee asked being greater than anticipated. More than the services were worth.

3. Seeming neglect or inattention on the part of the doctor. The patient's ideal medical adviser and the every-day doctor may be widely separated entities. Often patients form erroneous conclusions as to the termination of sickness or operative procedures; if such are expressed, they should be immediately corrected and not permitted to be held. Be frank with the patient or some one who is close to him. Become a good listener. When patients who have been the rounds consult you, it might be advisable, by questioning, to learn the cause of dissatisfaction with former advisers and thereby avoid the shortcomings, in his estimation, of your predecessors. It is absolutely impossible for one physician to always obtain results that will be satisfactory to every one who consults or employs him.

Upon the financial part of the practice of medicine, directly or indirectly, has probably arisen most of the dissatisfaction on the part of patients; always when possible endeavor to have your patients informed as to your expectations in the way of compensation. Unfortunately we usually do not find out that dissatisfaction exists until the services have been rendered and a settlement is requested. Sometimes an explanation will be sufficient to satisfy, sometimes a reduction in the account becomes necessary, and occasionally the only way to do is to sue and obtain judgment. The latter course does not satisfy the patient, but is the only recourse the doctor has for securing compensation. Should evidences of dissatisfaction show up, or a suspicion of the same arise while services are being rendered, endeavor to learn the cause thereof at once, if you can consistently, without losing self-respect, remedy it; otherwise request an immediate settlement and dignifiedly retire from the case. Always endeavor to forestall misunderstandings. Deal with patients in a way that there will be no misinterpretation put on what you say. When new pa-

tients consult you or engage your services it would be well to post yourself as to their financial responsibility, especially with regard to the medical profession, and then determine what action is best for your interests. "Short accounts make the longest friends."

Seeming inattention or lack of interest in their case or sometimes a mistaken diagnosis are causes of dissatisfaction, the patient imagining he has been wrongfully treated. Sometimes it is plain cussedness on the part of the patient. Frequently there are causes of a purely local nature that produce dissatisfaction, such as inharmony among the professions, meddlesome druggists, etc. These conditions we must ever be on the lookout for and act as the occasion demands.

No arbitrary rule can be formulated whereby dissatisfaction can be avoided. The doctor who is the student of human nature and understands mankind the best will have the fewest number of dissatisfactions arising in his professional work.

WHEN THE PATIENT SUES FOR MALPRACTICE.

Be prepared for such contingencies by being affiliated with some defense organization. As soon as you have an intimation that suit will be brought against you notify your defense company, giving them complete details. Give the dissatisfied patient to understand that you are to be defended by an incorporated, organized, active defense company, and in the majority of cases suit will be dropped. In the event of the case coming to trial, after the attorney has been selected, give him all the information regarding the case at your command. The defense company of which you are a member should plan and direct the detail part of the trial and post the attorney as to the law in the case. Select your expert and other witnesses and see to it that they are thoroughly familiar with all the facts in the case. Remember that, as a rule, quality of testimony counts for more than quantity. Sometimes, though rarely, it may be best to listen to talk about settlement. Such action, however, should only be contemplated after mature deliberation and consultation. As one malpractice suit usually means another, we should act in this matter along the line of prophylaxis, thereby, to a considerable degree at least, eradicating one of the most disagreeable possibilities of the practice of medicine, a malpractice suit.

SEWAGE DISPOSAL—THE SEPTIC TANK.*

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The disposal of waste is a fundamental problem for all living organisms. As the body takes food and builds up into its own peculiar structure, so it must continually break down and give off waste products, which, as a rule, if they accumulate, prove poisonous to the organism itself. This is the case with individuals; it is still more the case when large numbers of organisms are closely congregated in communities.

The political body resembles the individual organisms of which it is

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composed. It is subject to the laws of organic life; it has its income and its outgo, and a failure to remove the waste products of life is inevitably dangerous to the units of which it is composed. In spite of these facts, the attempt at scientific waste disposal is comparatively of recent date. The great problems of sanitation are not sufficiently taught in our great schools of learning. The great strides of progress along these lines have usually been the result of emergencies, such as the conditions in London in 1844 and conditions in Chicago prior to building the drainage canal.

Systems of water carriage are now almost universally employed for the quick removal of offensive waste from thickly settled communities, but, as often happens, however, the solution of one problem has given rise to another scarcely less difficult, namely, the sanitary and economic disposal of vast quantities of contaminated liquids known as sewage.

The volume of sewage discharged by modern communities is so large, especially where water is abundant, and the character of the sewage is always so objectionable, that the sewage disposal problem becomes, both from the economic as well as the sanitary point of view, one of the most serious with which modern communities have to deal. No law of sanitation is now more clearly recognized than the principle that the wastes of human life must be diluted with an adequate supply of water and quickly removed from the region of habitation.

The vast volume of water in which the waste elements are distributed makes the problem only the more difficult. In London, it is said, the average daily flow of sewage is 34 gallons per capita of population. In several of the smaller Massachusetts towns it averages about 100 gallons, while for the South Metropolitan district of Boston it is about 250. In this latter case, the yearly flow amounts to about 46 billion gallons, or a small-sized river.

The dangerous and the undesirable constituents of sewage consist of living germs and dead organic matter. The germs of almost any disease of man or the lower animals may gain access to sewage and, in the case of typhoid fever in particular, the infection may be transmitted through this agency so as to cause an epidemic on a disastrous scale.

The experiments of Jordan, Russell Zeit and of Frost indicate that typhoid bacilli in water, and especially in sewage—polluted water—for the most part, die in a few days. Yet the statistics of Lowell, Lawrence, Chicago, Philadelphia, Pittsburg and Newark indicate that the typhoid germs which survive a sojourn in sewage and water are sufficiently numerous to produce serious results.

The ocean furnishes seaboard cities with the most favorable possible conditions for disposal in water. The discharge of sewage into inland waters, such as lakes and rivers, and especially where simultaneous use is had for sewage disposal and water supply, as in the case of Chicago before the opening of the drainage canal and to a certain extent since, may be attended by the gravest dangers. It is evident that for inland cities, except those located on the largest lakes and rivers, some other process of sewage disposal must be substituted for the direct discharge into water.

The limits of this paper will preclude the consideration of the more general subject of sewage purification in its broader aspect—omitting any reference to broad irrigation or sewage farming, chemical precipitation, as well as intermittent filtration through sand, or the purification that takes place in running streams.

At an early day English sanitarians had noticed that in cesspools some action took place which led to the dissolution of the solid matters of sewage.

The septic tank or the anaërobic process of sewage purification owes its practical development to Donald Cameron, of Exeter, England, who, in 1895, installed a water-tight covered basin for the treatment of a portion of the sewage of that city, and gave to it the picturesque name of the septic tank.

C. N. Talbot, of Urbana, Ill., about this same time, built a sewage tank at Urbana, Ill., in which the liquefying anaërobic action was observed, and a larger plant was designed for Champaign in the year 1895 and built in 1897. While the septic tank is not entirely out of the realm of experiment, its principles are so well understood as to make it at present a highly, if not the most potent, factor in the sanitation of cities and towns not located directly upon living and permanent water courses.

It is unfortunately a fact that running water will correct the danger and offensiveness of sewage, if it has opportunity of running a sufficient distance, but with the teeming and increasing population of this great Mississippi Valley what city can lay claim to any portion of any running stream for its special and exclusive use for purposes of sewage purification? And, moreover, the great majority of our cities, towns and villages are not located upon permanent and living water courses.

The septic tank method of sewage purification is especially adapted to meet the wants of these less favored communities. The septic tank method is not chemical or mechanical. It is biological. It consists simply in availing ourselves of the action of certain bacteria which abound in Nature and require but favorable conditions in which to act. The term bacteria is so frequently associated with disease that we are apt to loose sight of the fact that the great office of this form of life is so largely beneficent, and in no way related to disease, but is directly beneficial to all living members of the animal and vegetable kingdoms—in fact, essential to life upon the face of the earth.

Pasteur first called attention to the existence of bacteria that not only live and perform all their functions without the use of the oxygen of the air, but to the growth of which species free oxygen is detrimental and even destructive. It was at first claimed that the anaërobic bacteria were alone concerned in the purification process of the septic tank, but later investigations have shown the action is not altogether due to strict anaërobes, but to organisms able to grow either with or without the presence of oxygen. The first septic tanks constructed at Exeter, England, were covered tightly. It soon appeared, however, that this type of construction is not at all necessary to the maintenance of anaërobic conditions. It has been found that if sewage be merely allowed to run slowly

through an open tank the general reaction appears to go on just the same. At Manchester, England, the results from the closed and the open tanks under like conditions showed no marked difference, and in experiments at Leeds the open tanks gave slightly better results.

For promoting anaërobic conditions, tight covers are, therefore, needless; but the prevention of odors, and the fly nuisance, and for protecting against wind and rain, a light frame cover may be advisable. In construction it is exceedingly simple. May be constructed of brick or cement or of concrete, either wholly or partly underground, and made to occupy very little room space. The most important point in the construction of the septic tank is its size in relation to the amount of sewage to pass through it in a given time. The tank is really a sedimentation basin in which the supernatant liquid and the settled sludge both undergo fermentation at the same time. Experiments conducted at Leeds indicate an appreciably greater removal in 24 hours than in 12 hours; while further prolonging the period to 48 hours or 72 hours is of no advantage. Clark and Gage, in 1905, have found that certain bacteria, especially active in sewage purification, increase rapidly during the first 24 hours of septic treatment, and after that time fall rapidly in numbers and, if the process is too prolonged, to smaller than in raw sewage.

The size of the tank should be sufficient to hold the flow of 24 hours, so that the inflow and the outflow may be equal or, in other words, the inflow of to-day should be the outflow of to-morrow; the first day's inflow should all be retained in the tank; the outflow commencing the morning of the second day. Some American sanitary engineers, notably Alvord, provide shorter periods, often only four to eight hours, with a further oxidizing over filter bed, with good results, but the general concensus of opinion of to-day is that the chief purification is accomplished in the first twenty-four hours.

The action that takes place in the tank is first by lysis, which may or may not be hydrolysis, i. e., decomposition with the addition of water to the molecule. Next they decompose the dissolved molecule, producing gases, on the one hand, and more stable peaty compounds, on the other.

Nitrogenous compounds are partially reduced to gaseous nitrogen, or free ammonia, and, together with cellulose, to carbon dioxid and marsh gas. The reaction is exothermic, evolving a certain amount of heat energy.

The amount of gas produced in the septic tank is variously stated by different authors—some as high as 7½ gallons of gas to the 100 gallons of sewage, and others to less than half this amount.

The composition of this gas varies widely, but, as a rule, about three-fourths is marsh gas—a hydrocarbon—and one-fourth free nitrogen.

The tank treatment alone without further filtration will render the ordinary domestic sewage practically free from all offensiveness, so that it may be discharged into an open ditch, creek or into a dry ravine without creating a nuisance, or it may be safely carried in the ordinary field tile and used to irrigate a lawn or field, but before being discharged into a general drinking water supply it should be subjected to further oxida-

tion over filter beds, which will complete the purification and render it safe to enter the general water supply.

It is maintained by some observers that pathogenic bacteria can not live in the septic tank; that the active bacteria of the process are antagonistic and destroy them.

The most important practical result of the septic treatment is the removal of suspended solids. Observations at the Exeter tanks show a reduction of 56 per cent. At Leeds 71, at Birmingham and at Lawrence 61, as the reduction or destruction, rather, of total solid constituents. When it is borne in mind that the relation the solids bear to ordinary domestic sewage is about 1 to 1,200, Mills says a sewage stronger than ordinary sewage contains 998 parts of pure water, and one part of mineral water, and one part of animal and vegetable matter, or two parts in one thousand.

The septic tank will destroy 60 to 70 per cent. of total solids, and 30 to 40 per cent. remains as sludge. The removal of sludge is not required oftener than every two or three years, and may be effected by a pump or dipped out by hand. This sludge is light and spongy when dry, odorless and has almost no value as a fertilizer. The chemists refer to it as the ashes of this process.

A residental tank can be made to operate just as effectively as a large one.

There are vast areas of suburban habitation that, by reason of circumstances, receive no benefit from sewers, living in remote portions and expectantly wait while sewers are being built in other portions of the city.

To these, this system offers the advantages of a means of waste disposal at once safe, sanitary, effective and at trifling cost. We would not argue that the residental tank when built would forever set aside the necessity of building sewer systems, yet we may say that their introduction and use in smaller towns and in suburban districts would be the means of delaying the necessity of their construction for many years and give the householder the modern conveniences of city life and at the same time insure a greater degree of safety. But under circumstances just cited suppose sewers to be introduced into the neighborhood at a later period. The effluent from these tanks can be readily diverted into the sewers, with the effect of eliminating the possibility of stoppage of sewers by reason of its contained solids, and also the necessity of flushing or expensive tearing up of pipes.

The process is continual and self-regulating, and requires but little attention except for the occasional removal of sludge. The Lawrence tank was not cleaned for six years, and at the end of that time was less than half full of accumulated sludge. At Lake Forest the tank has been operated for three years without cleaning.

These tanks can be multiplied in number and placed at each sewer mouth where required, the size depending upon the amount of sewage discharged. To throw raw sewage into a creek that is not constant, but liable to be dry a portion of the year, is becoming more hazardous to cities; as the increasing value of the lands through which these streams

flow, the land owners are liable to resent by injunction and other legal procedures the contamination of these natural water courses.

The septic tank offers an easy solution of this problem, as the effluent, after passing through the tank process, is harmless and odorless and unobjectionable to the most fastidious land owner. Stock may drink from the stream, receiving this effluent without harm. It is especially adapted to small plants, such as a creamery, the washings and waste of which creates one of the most noxious and offensive forms of sewage. The quick putrefaction of milk waste in the washings of vessels is apt to cause trouble in the vicinity unless disposed of by some quick method of treatment.

The whole sewage disposal problem is a matter that concerns the public health—a vexatious and troublesome one—does not appeal to the commercial side of us in any way; hence, there is no one proclaiming on the housetops the advantages of this or that method, yet a problem of grave import and one that must be met.

Although the practical working of the septic tank has been known for several years and in practical operation in a large number of cities throughout the United States and in Europe, still its value is not yet fully realized.

From my observations I feel confident in saying it is the coming method of sewage disposal under conditions found to exist in many of our populous sections of this and other states.

HOSPITAL ABUSES AND THE REMEDY.*

GEORGE THOMAS PALMER, M.D.
SPRINGFIELD, ILL.

The subjects which are before us for discussion to-night are so essentially basic and fundamental in character that there is the greatest danger of our floundering in generalities and broad theories rather than reaching practical conclusions and effective remedies.

There is not the slightest question as to the existence of the abuses which we have come together to consider. The case is established by the personal knowledge and experience of all those who are engaged in the practice of medicine, either outside the hospitals or in them. If not, a very little investigation will convince us that the evils are even greater and more far reaching than they are usually pictured.

Unfortunately, the great majority of physicians, while generally recognizing that medical charity evils exist, believe that we are dealing with some intangible, vague matter, involving some fine-haired principle of ethics, which may be satisfactorily and definitely disposed of by a set of resolutions deploring its existence.

It is my personal conviction that this is not a matter for virtuous but innocuous resolutions; but one which demands drastic action. It is not a thing to be merely tearfully deplored; but one to be forcefully proscribed in our rules of ethical and professional conduct.

*Read by invitation in Symposium on Medical Charities, before Chicago Medical Society, May 15, 1907. For discussion see Page 277.

I shall confine myself to the hospital abuses as they affect the physician; the abuses that are now tolerated by the physician, and the simple and effective way in which these abuses may be remedied by the physician.

The abuse of the charity service in the hospitals of our medical centers is not a matter in which the physicians of the larger cities are alone interested. The subject is rapidly becoming one of deep concern to the country doctor and the doctor of the smaller places. Already the out-of-town physician is beginning to look with suspicion, if not with open resentment, at the inroads which city hospitals are making upon his practice, and in some localities an attitude of latent hostility toward city physicians is quite apparent.

I have had an opportunity to observe the city hospital from several points of view. Practicing in the city of Chicago, I found a sentiment prevalent among the younger medical men that patients fully able to pay for medical and surgical service were regularly cared for and operated upon in the hospitals without fee. In my pilgrimages throughout the state, in my connection with the Illinois State Board of Health—in which I was in constant, intimate contact with physicians of village and hamlet—I heard innumerable complaints of incomes decreased and of good fees lost through the prodigal charity of the hospitals of cities. Later, as a practicing physician in Springfield, I have felt the personal losses occasioned by the open-handed hospitality of Saint Louis hospitals extended to some of those from whom I had reason to expect a portion of my income.

I have grown, in my more intimate study of hospital abuses, to classify the offending institutions into three general groups. The strictly private hospitals—particularly those owned and operated by physicians—are relatively free from the more objectionable abuses. The semi-public institutions—those conducted, as a rule, by churches or charitable orders or societies—are generally mismanaged and are responsible for much of the evil of which we complain, while the purely public institutions of the country are often conducted upon a plan which is baneful in every way.

It may be said that the semi-public hospitals are operated to the disadvantage of the physician. The mismanaged public institution, however, works a hardship not only upon the doctor, but upon the other hospitals.

The public hospital—such as Cook County Hospital—conducted at the expense of the people—is chiefly objectionable to the physicians of the city. There is no provision for pay for the staff and no charge is made for bed and care, and it is unquestionably true that many are cared for free at this and like institutions who are fully able to pay for all they receive, or at least capable of paying some hospital for care and nursing. The regulations for admission, however, are such that the country physician does not feel the results of this abuse.

The semi-public hospitals make a strong appeal to out-of-town patients, underbidding the hospitals of the smaller places through the extremely generous but unbusiness-like attitude of their unpaid staffs of eminent medical men. So general has this quest for outside patients

become that, while city physicians are now awakening to the reality and the seriousness of medical charity evils, it is in the rank and file of the country doctors that we will find the most vigorous complaints and the most bitter feeling against the injustice of the present methods of city hospital management.

The out-of-town physicians, who must be recognized as essential "feeders" for the city hospitals and who contribute not a little to the prosperity of city specialists, come before you with this indictment and with these charges which, they believe, may be fully substantiated and which, they are confident, are recognized by the majority of physicians practicing in the larger cities:

They charge that the members of the unpaid staffs of your hospitals operate upon and treat patients concerning whose financial conditions they know nothing.

They charge that, in so doing, the staff physicians not infrequently render medical service to the patients of other doctors—patients who are fully able to pay reasonable or even liberal fees.

They charge that certain hospitals enter into contracts with wealthy corporations to provide bed and nursing for their employés, and that these hospitals throw in, *gratis,* the services of their surgical and medical staffs.

They charge that, by this procedure, the hospitals appropriate to their own profit medical services worth large sums of money, which, in former days, went directly to the profit of the rank and file of the medical profession.

They charge that the superintendents and sisters superior of certain city hospitals enter into direct correspondence with well-to-do patients of country doctors and offer free operation by eminent staff surgeons, provided the patient promptly pays for his room, his board and his nursing.

And they charge that, in certain localities, this practice has become so generally known that patients promptly write these hospital officials when the local physician declares special treatment necessary.

In addition to this, country and city physicians alike contend that our purely public hospitals accept patients without due regard for their financial condition, giving free medical care and free beds to those who could pay for both.

In this connection I am told of an applicant for charity treatment who was advised that he would be operated without charge in one of the West Side hospitals, provided he paid for bed and nursing. Liberal as this offer would seem, it was not alluring to this opulent beggar, who preferred a free bed at the county hospital. It was afterward ascertained that he could have paid both surgeon and hospital without unduly depleting his funds.

And now, that I have presented to you the chief counts in the general indictment against the hospitals in medical centers, I desire to add a few words of evidence, and if this evidence can be substantiated—as I con-

tend it can—it will not be necessary for us to argue the reality of these baneful influences nor to urge the necessity of drastic remedial action.

In the few moments which are at my disposal I can not lay before you all of the evidence that has been presented to me. I would say, however, that, during the several weeks that I devoted to the investigation of this subject in Chicago, I was repeatedly told of contracts existing between one of the well-known hospitals and a railway company for the care and treatment of employés, wherein no provision was made for a penny of compensation for the staff and whereby scores of general practitioners were deprived of hundreds of dollars in fees, and my information came, in almost every instance, from men who are or have been associated more or less directly with the hospital in question.

I was further repeatedly told of a contract existing between another well-known hospital and an alien medical aid insurance company, whereby the hospital gave bed and nursing to the beneficiaries of the corporation at a very reasonable rate and threw in the services of the attending staff. Prior to that arrangement, I am told, medical fees constituted a very large part of the expense of the insurance organization and a not inconsiderable portion of the income of a number of physicians.

It may be remarked, parenthetically, that this is a brand of "contract practice" with a vengeance. It differs only from the contract practice forbidden by our better ethical sense in that, by this system, the medical profession receives no compensation at all.

As to the facts in the foregoing statements, I admit that I have no documentary evidence. I can vouch for the truth and accuracy only so far as I can rely upon the integrity of the eminently reputable physicians who were my informants. But of the following incidents I have more convincing evidence which may be shown to the skeptical with every detail unequivocally verified.

A prominent Springfield physician recently advised a patient to enter a local hospital for operation, and, knowing the patient's circumstances, set a fee for the service at $100. After a week's delay the patient called upon the doctor and stated that he had decided to submit to operation, but that he would go to Chicago for treatment. He had reached this conclusion after receiving a letter from the sister superior of a Chicago hospital advising him that nursing and room would cost him no more than at his home hospital and that an eminent surgeon of the staff would operate him without fee. The patient could not be induced to be operated in the Springfield hospital at an expense approximating $150, when the total expense under the distinguished Chicago surgeon would amount to less than $50, with a trip to Chicago thrown into the bargain.

In another central Illinois city a wealthy farmer came to his physician with the statement that the superintendent of a Chicago hospital had offered to receive him for operation for hernia for the bare cost of hospital care, and had promised him the service of a surgeon of national reputation, without fee. The patient had computed his total expense at $34. He suggested that, if the operation, including all nursing and incidentals, could be done at home for $34, the family physician could oper-

ate. This was a distinct concession to home industry. The local doctor declined flatly to enter into any such competition.

Similar instances are too common in occurrence to require further recitation. I am satisfied, however, that every physician of extensive practice, residing within a hundred miles of a great medical center, can add his testimony to our already long list of cases.

One incident of hospital abuse strikingly illustrates the growing *popular* conception of the nature and purpose of hospital charity service.

When a woman was being operated upon in a certain Chicago hospital her husband sought the endorsement of one of the assistants to a draft which he desired to have cashed. To the astonishment of all present, the draft proved to be for a very large sum of money. The operator expressed his indignation that he had been asked to operate without fee when the husband had such an amount of available cash. In explaining the matter the husband stated that it was his conception, gained through the experience of those who had been similarly operated, that it was the custom of the hospital to operate upon ward patients without fee and that he did not know that ability to pay entered into the matter at all. The sincerity of his belief was demonstrated by the freedom with which he displayed his draft in the hospital.

There can be no possible advantage in a meeting of this kind to give names of hospitals or of physicians. We are considering the evil itself. Personality may be reserved for a day when it will be a potent factor in the operation of our remedy and then it may have full play.

If you will take my word for it that I have gathered my data from the most reliable sources, and that I have entered into the study of this situation with entirely unprejudiced mind, I will rest my case with the assurance that we are dealing with a system wholly unjust and unfair to the rank and file of the medical profession. We are dealing with conditions which, unless rectified, will create a spirit of open antagonism between the physicians of the country and the city.

The country doctor recognizes in the specialist of the city more thorough training, greater experience and superior facilities for diagnosis and cure. He yields to his city brother the patient who desires the services of a more eminent man than himself. He rightly feels, however, that the selection of the city specialist should rest upon better fitness and not upon lower price. He resents the diversion of much-needed fees from his pocket to the coffers of a hospital—however sainted its name may be. He does not begrudge the city physician the big fees—he does resent the wanton destruction of the small fees upon which he and his family should be permitted to live.

An estrangement of the country doctor from his city colleague can not but result in material loss to both. It is a significant fact that skilful operators are developing in the smaller cities more rapidly than ever before.

While it is true that the hospital authorities are directly responsible for the abuse of hospital charities, the general practitioner is disposed to blame the members of hospital staffs for permitting a continuation of

preventable evils. The outside physician can not conceive how groups of distinguished and forceful men can be entirely dominated by a handful of hospital officials. In other words, they are unable to comprehend how a sister superior, a board of lady managers or a council of superannuated divines can control the medical profession in institutions which, without physicians, absolutely could not exist.

Holding the members of hospital staffs as at least passively responsible, it is to these physicians that the medical profession naturally looks for the application of the remedy.

This remedy, it seems to me, is simple. It will be as effective as the real spirit of medical ethics and fraternalism is strong. Briefly my suggestions are these:

A statement of the financial condition of the patient should be made a part of the case history or the permanent record of every patient for whom gratuitous service of the medical or surgical staff is asked, whether it be in a public or semipublic institution.

It should be incumbent upon the hospital management to ascertain the financial condition of the patient and a certificate containing the facts, from a physician or clergyman, personally acquainted with the circumstances, should be made requisite to admission to the hospital for all those who are to receive free staff service. Doubtful cases, or those in which such certificates are not available, may be referred to organized charities for investigation. I am advised that not only are the bureaus of charities willing to undertake this work of investigation, but in Chicago they are already carrying it out for one free dispensary and in such a way as to materially limit the most flagrant abuses.

A demand by hospital authorities that members of the staff render service to those occupying pay beds and unable to furnish evidence of inability to pay for medical care should be met with absolute and unqualified refusal on the part of hospital physicians—except in the matter of immediate treatment in emergency cases. The entire staff should support a fellow-member in such a stand.

Our medical organizations should declare that the acceptance of a staff position, rendered vacant through the dismissal or forced resignation of a physician who has declined to yield to the demands of a hospital in such instances, shall be construed as essentially unethical and prejudicial to the welfare of the profession as a whole. The physician accepting such an appointment should be denied membership in our reputable medical societies.

The acceptance of such unethical persons by a hospital should indicate that the institution itself is not of such character as to merit the support of ethical physicians. This should apply to the remaining members of the staff as well as to the reputable men who refer cases to hospitals.

I am impressed that no large hospital can succeed if deprived of the support of the organized medical profession. In view of this fact, it must be admitted that whoever may have been responsible for the origin of

these evils, it lies within the power of our medical organizations to abate them.

The interest which this society has manifested in medical charity abuses has attracted more than passing attention. Your efforts must inevitably be accepted as a test of the strength of medical organization. In the words of an editorial in a recent medical journal, "the eyes of the whole medical world are now on Chicago. There is a city with the most magnificent medical organization in the nation. There abuses of free dispensaries and charity hospitals has been proven to exist in its most malignant form. The Chicago Medical Society has recognized the existence of these evils—has appointed a committee to abate them. There is the disease; there is the organization which may apply the remedy. There is the test for the efficacy of medical organization. Will it be found weak and ineffective?"

THE RELATIONS OF THE TEACHING OF CLINICAL OBSTETRICS TO THE PROBLEM OF MEDICAL CHARITIES.*

CHARLES S. BACON, M.D.

CHICAGO.

Since the abuse of medical charity has come to attract the attention both of the profession and of the workers in sociology, it is important and very desirable, if not necessary, that every teacher of medicine should look into the methods pursued in his own department in obtaining clinical material in order to discover whether in his efforts to provide material for his students he is not injuring both his colleagues and the community by extending medical charity so as to pauperize the recipients. It is my purpose to-night to study the needs of the clinical teacher of obstetrics and seek to discover whether those needs can be met here in Chicago by the material at hand that all will admit is proper material for an obstetrical clinic.

I would premise that the problem of medical charity is to give necessary medical assistance to those unable to pay for it in the usual way, without doing an injury to the community by tending to pauperize the recipients.

Suffering must be relieved and needed help given to the poor. The general humane sentiment of mankind demands as much. But the physician alone should not be required to render this aid any more than the restaurant keeper should be required to feed the hungry, or than dry goods merchants should be compelled to clothe the ragged poor.

This medical aid to the poor can be paid for by the state. The patients can also pay for their treatment to a certain extent by serving as clinical cases for the instruction of medical students. Medical teaching is very important to the community. It is not necessary here, and it should not be necessary before any kind of an audience, to prove that the welfare of a community demands a well-trained medical profession. Moreover, the indigent sick are not injured by being used as clinical material. Indeed,

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it is generally admitted that in a teaching clinic patients are better served than in a pauper hospital where there are no students.

It is also coming to be recognized that there is a pauperizing tendency in the bestowal of medical aid without requiring any equivalent. If emergency cases like surgical accidents were the only ones thus helped, the temptation would not be so great, but when a pregnant woman learns that she can be confined free in a hospital and have the best of professional care and skill she will make no effort to accumulate means to properly pay for the services of a private physician.

Hence, while it may be necessary for the state to provide medical aid for the poor in localities where there are no medical students, still I think it should be the rule that whenever possible all medical aid should be given in teaching clinics. Can this principle or rule be applied to obstetrical charities?

It is precisely in these charities that all teaching clinics are forbidden, as shown, for example, by the rules of the Cook County Hospital. It is claimed that the sentiments of modesty of the patients are offended when they are exhibited to students. I do not know that it is ever claimed that they would be less well treated. I believe that the same forces that secure better treatment of patients when students are present to learn and incidentally to criticise would work in these cases and even with especial emphasis.

The sentiment of the community on this subject depends largely upon the way private patients are educated by their physicians. There was a time when a physician could hardly inspect the genital region. For example, the student was taught and the physician practiced "catheterizing under the sheet." Earlier still, men physicians were never called to obstetrical cases except in the greatest emergencies. This is now the situation in some oriental countries. Are the American women of the best classes less modest, less womanly, less civilized because they are intelligent enough to know the advantages of thorough disinfection and the importance of most careful watching of the progress of labor? An extension of this knowledge to the poorer women and to the community in general will dissipate the prejudices against the proper management of labor in teaching clinics.

Proper management of obstetrical teaching clinics is, of course, very necessary. This implies, first, a thoroughly competent and responsible teacher. He must not only possess a good degree of skill, but he must also be a good teacher and demand earnest, serious work. He must not allow any unnecessary annoyance to the patient, and especially no unnecessary internal examination. On the other hand, he must insist on a strict watching of the patient.

A second requisite in the proper management of an obstetrical case in a teaching clinic is limiting the number of students. In a private house the number should not exceed two, and in a hospital not more than four to six. Unusual operations may be done in an operating theater the same as surgical operations, but these operations are, after all, of but little value to the onlooker.

Having decided upon the principles which justify obstetrical teaching clinics, the question arises, Are there enough obstetrical charity cases to provide material for clinical students? A second question would be, Can the teaching clinic use all of the obstetrical charity cases?

We now turn to consider more closely the educational problem of the requirements of the teaching of clinical obstetrics and ask, (a) How much time in his course should each student give? (b) How many cases shall a student see. (c) What should be the size of the classes. (d) How many cases are needed in clinics?

There is in America a pretty general agreement upon the outline established by the Association of Medical Colleges. This schedule provides for 1,000 hours of work as the proper amount for a year. With 200 days in the course, this is an average of five hours work' per day. Such a basis implies, therefore, that at least one-half of the time of the student is given to the preparation of his required work outside of the class or clinic room. An obstetrical clinic differs somewhat from other clinics in the fact that more time, practically all of the time, must be spent in the clinic room, while the student has, however, much of the time for study during the hours spent by the side of the patient. Now, during the four years' course, approximately 1,800 hours are spent in didactic lectures, 1,000 in the laboratory and 1,200 hours in clinics. The Association of Medical Colleges asks for only sixty hours for clinical obstetrics out of 1,200 clinical hours. I am certain that this amount is too little and much too small a proportion. No doubt the reason why the obstetrical clinic was given so few hours was that very many colleges have so poor facilities for obstetrical teaching that it was considered unwise to make the minimum requirement higher. I believe that all the best obstetrical teachers will support me in the contention that the obstetrical clinic should have at least 100 hours, or one-twelfth of the whole number of clinical hours. This would give, at five hours a day, twenty whole days for obstetrics.

How much work is required to fill this time profitably? I would answer on an average of one labor a day combined with at least daily visits to the puerpara and the babies. This work should be divided between the hospital and the out-patient maternity dispensary. Each has its advantages. In the hospital the students can see the case conducted in an ideal way, while in the dispensary he learns to deal with patients in their homes and to provide necessary equipment and accommodate himself to all varying conditions pertaining to private practice. Practically it will be found best to give one week to the dispensary work and two weeks to the hospital.

The basis of work is most easily arranged when six students constitute a class, subdivided into three squads of two in each. With this arrangement a squad of two work in the dispensary, while the other four are on hospital service. Of course, members of the hospital squads must be called to cases when several labors occur simultaneously, and frequently only one student will be at a case.

In this way 17 classes can have work each year providing for 102

students. This would require 365 dispensary and the same number of hospital cases. Each student would see 21 cases. To accommodate 365 cases a year in a hospital would require from 12 to 15 beds. It is not here the place to go into the question of the equipment of such a hospital. If a school has 200 students in a class instead of 100, of course, the capacity of the hospital and dispensary should be about doubled.

For the last five years the number of yearly graduates in Chicago has been over 700. For such a number of students over 5,000 patients would be required. Allowing for postgraduate instruction we could say that in round numbers about 6,000 patients a year would be desirable to furnish the obstetrical clinics. This would be about one-tenth of all of the confinements a year. Are there as many poor women in Chicago who can not pay for their confinements? The investigations of our committee on the abuse of medical charities are not yet so complete that we can answer this question. Dr. Renn informs me, however, that he would not consider that proportion very high. Nevertheless it is evident that the clinics can take care of all or nearly all of the obstetrical charity cases. It is not necessary, then, that the state provide for them, except as clinical use is made of the cases cared for by the municipality or the state.

The plan outlined above may receive criticism from both laymen and the medical profession. The objections of the former will probably be found to rest upon an unreasoning prejudice against teaching clinics, perhaps partly supported by mistakes made in the past by clinical teachers. The profession and especially the schools should recognize their responsibilities to the community and to the cause of medical education and keep a very close and critical supervision over all clinical teaching.

The objections of members of the medical profession who are not engaged in teaching will probably rest upon a certain amount of jealousy of their teaching colleagues. This would be largely avoided if it was apparent that only those patients absolutely unable to pay are taken into the clinics. Some provision certainly should be made to secure an investigation into the pecuniary condition of all applicants for medical assistance. With this arranged all the profession should welcome such a plan of obstetrical teaching as above outlined. We would not only furnish well-equipped graduates, but the clinics could be utilized by all of the profession of the city for postgraduate work. Such a plan of instruction would soon lift the practice of obstetrics to a plane corresponding to the advance in medical sciences, below which it has remained because of the inadequacy of clinical instruction. The benefits to the community would be still greater. Not only would the mortality and morbidity from puerperal infection, which has remained for the last fifteen to twenty years stationary, be reduced, but other accidents and affections of the gravida, para and puerpara would be greatly diminished and lead to a great saving to the community in the preservation in health of the most important class of the community, mothers.

THE DISPENSARY ABUSE.*

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In describing the conditions under which medical charities are at present administered, one is obliged to characterize it as a condition of anarchy—without supervision, system or order.

The isolated instances of abuse of medical charity with which you are all familiar I will try and present in the aggregate as clearly as the vast task will permit, calling your attention to the most conspicuous causes that tend to promote it. We are all familiar with the applicant who demands treatment at the charitable clinics on the strength of the fact that he has been a citizen of the country and a taxpayer for years, the sham pauper who assumes the most ragged attire to deceive the medical attendant that they might receive free treatment, thereby holding what they have and getting what they can. One of the members of our society was requested by the husband of a woman he was to operate on as a charity case to endorse a bank draft for $1,000.

The thirty-seventh annual report of the Central Free Dispensary contains a report from the committee on dispensary, in which appear the following statements: "Out of seventy-six families whose financial affairs the bureau of charities investigated for us in 1906, only seven were reported worthy of free medical treatment at the dispensary, although the other sixty-nine had stated that they were unable to employ a physician. Some of the reports are very interesting. An elderly lady from the South Side applied for medical treatment. When asked by me whether she was not able to consult the doctor in his private office, she claimed to be almost too poor to pay car fare to come here. An investigation of the case by the bureau of charities showed, however, that this family, with four of its members earning high wages, lived on the first floor of a very handsome apartment house, paying a rent of $35 a month. In another case a patient was found to earn $20 per week. A young Jewish couple were looked up and found to occupy a beautifully furnished flat, the man making good wages. Another man who received treatment free was found to be the owner of a fine three-story flat building. Another party was discovered to have a good income as assistant buyer of a big downtown firm. One man who had his boy treated in the children's department for several weeks, and who claimed to be very poor, was found to be the owner of a good grocery store. Not infrequently we get patients who have a regular family physician whom they pay, but it seems that some physicians, instead of calling some specialist in consultation, send these private patients here, instructing them not to pay anything, as this is a free dispensary. We inform these patients, however, except a few purposely sent us for clinical practice, that they can not be examined here."

We realize that we have not been able thus far to pick out every one who is able to pay for medical services, but we have succeeded in a num-

*Read in Symposium on Medical Charities before Chicago Medical Society, May 15, 1907. For discussion see Page 277.

ber of cases, and through the prompt work of the bureau of charities not only the undesirable persons themselves have been kept away, but also their relatives and friends who would shun an investigation. The total number of people refused treatment during the year 1906 was 448. The total number of patients treated was 28,977. When a person applying for admission appears to the distributor to be able to pay a physician, but denies such ability, a request is made to the bureau of charities on a blank provided for that purpose, and usually the next day a report is received from one of the visitors of the bureau, giving the exact and full facts about the applicant so far as they can be ascertained. It is believed that such a plan as this, if it were generally adopted by the dispensaries and hospitals of Chicago, would most effectively prevent further increase in the abuse of these medical charities. In some other states these abuses have grown to such proportions as to necessitate the creation of a state commission to control and regulate the dispensaries and hospitals. It is greatly to be hoped that this abuse will not attain such proportions in Chicago. It may be of interest to note that this matter has recently been taken up by the Chicago Medical Society and that a committee has been appointed to investigate and report. It is a satisfaction to feel that the Central Free Dispensary has already anticipated any criticisms and suggestions which may be made along this line by adopting efficient and satisfactory plans to prevent the abuse of this medical charity.

Individual instances similar to those mentioned in the report have occurred in the experience of almost every one of us. For instance, when this question was under discussion in the Southwestern Medical Society during the past winter, one member told of a family for which he had for some years been the attending physician. He was at the time attending one of the children, and was being paid his usual fee for each visit. While the child was under his care, the mother was attended and delivered by one of the staff of one of the leading maternity hospitals in the state, for which service she paid nothing. A member of the society from the West Side told of a woman in good circumstances who engaged him to attend her in confinement. Not hearing from her for some time, he called to see why he had not been sent for, and found that she had in the meantime been attended by one of the staff of a maternity hospital, for which service she had paid nothing.

Many of our hospitals have contracts with large corporations, agreeing to render free medical and surgical services to injured employés, the corporation merely paying for a bed by the year and thus securing unlimited services for a purely nominal amount. One could go on mentioning instances in which medical charity is abused until his hearers were convinced that, according to popular ideas, it is eminently proper for our citizens to receive something for nothing from the medical profession. It is shameful that free dispensaries which are such worthy charities in theory have become dangerous menaces to society in general owing to the fact that they encourage begging and dependence on charity to such an extent. Persons who can well afford to pay for their treatment and medicine have become so hardened and brazen that they will stand in

line for hours awaiting their turn that they may receive even their medicine for nothing.

If the brazen effrontery of these sham paupers does not entirely deter the worthy sick poor from seeking relief in these institutons set apart for them, it does interfere with the promptness and efficiency of their treatment by overcrowding and overtaxing the medical attendants, thus lessening the time and attention given to deserving patients.

Many of these institutions, intended for the relief of the sick poor, are supported by private donation and by public money intended for charity, which should not be wasted on those who can afford to pay for medical services. To use these funds in this manner is not only a serious breach of trust, but is an open encouragement to others to commit fraud.

To the community at large these influences are demoralizing, pauperizing the shiftless and lazy and adding the cost of their support to the practice of fraud, because it is so easy to deceive the individual who burdens of others. Many persons take their first lessons in the successful admits them to these institutions for treatment.

A learned economist has said that all civilized communities have enacted laws having for their object the enforcement of certain restraints in appetite. He states that the so-called benevolent impulses of our nature which move us to give relief to those who appear to be in distress may often be the cause of creating a new lot of beggars. He advises that these impulses, which may lead to injury, should be restrained as well as the appetites. It remains for us to educate the press and public to the full danger of moral degradation and to the full value of efficiency of properly administered charity when associated with self-respect, and the latter is the goal to which we should aim to lead our charges.

The committee appointed by the council of the Chicago Medical Society to investigate this abuse of medical charity is under many obligations to Mr. Bicknell, superintendent of the bureau of charities, with whom we are cooperating. He has personally directed and supervised the gathering of the data on this subject, using his own office force and experienced investigators as far as he could consistently do without crippling the important work in which the bureau is engaged. To hurry the completion of this immense undertaking, we have employed three additional investigators to proceed under Mr. Bicknell's directions, whose duty it will be to verify the data already in hand and so complete its compilation.

In the table that I am using this evening I have tabulated the reports from thirty-four dispensaries, just as they came to hand, without thought or desire to affect the presentation favorably or unfavorably, and, although these findings fairly represent the methods of administering medical charity at the present time, I have no doubt that when we come to consider the full report conditions will appear in a more aggravated light, for it is from the least worthy that we are yet to hear. The following figures, therefore, rather underestimate than overstate present conditions. The investigation carried on by the committee on abuse of medical charities has shown that there are in Chicago at present about sixty

free dispensaries. We have complete reports from thirty-four of these institutions.

LACK OF PUBLIC SIGNS.

Only eight out of thirty-four dispensaries have public signs announcing that treatment is only given to the poor. Many people, well able to pay, go to these institutions ignorant of this fact, believing that they are not only welcome as long as they are willing to serve as clinical material, but that their attendance is solicited. In the remaining twenty-six dispensaries, there is no sign to indicate the object for which the institutions are conducted.

DISREGARD FOR THE NEEDS OF THE COMMUNITY.

In some localities, there are three to six free dispensaries facing one square; other localities noted for the poverty of the inhabitants have none. Some are situated in residence districts where flats rent for $20 to $45 per month. An instance of this kind was referred to the council to determine the propriety of maintaining an institution of that character in that particular neighborhood. Investigation by the bureau of charities showed that there was no need for a free dispensary in that locality, and that it was not properly equipped to serve as one; that its method of operation precluded its right to the name of free dispensary. On informing the directors of these facts and of the danger of creating a new lot of beggars they abolished it.

There are dispensaries located in every conceivable place in the city that seems to promise patronage. Some are behind drug stores where the medical attendant makes a practice of prescribing large mixtures to the mutual benefit of the physician and the proprietor of the drug store. No attempt is made to determine the underlying pathological condition of the patient, but they are encouraged to keep coming on the principle of "little drops of water, little grains of sand," etc. These dispensaries are purely mercenary in character, and are established purely for the purpose of working up business for the doctor and the druggist. There is at present no way of distinguishing them from legitimate institutions. Some means of supervising and controlling such places should be devised.

LACK OF INVESTIGATION IN REGARD TO THE ABILITY OF THE PATIENT TO PAY.

This is the cardinal fault. In thirty-two of the thirty-four institutions, the investigation consists of an interview with the patient. A few questions are asked, the purport of which the applicant at once apprehends and answers accordingly; as no attempt is made to investigate the home or financial circumstance of the applicant, any one can visit these dispensaries without fear of detection. The result is that only two or three of the thirty-four dispensaries can affirm that the sick poor receive the prompt, gentle and efficient treatment that their dependence entitles them to, and that they are not excluded or crowded aside by a horde of sham paupers. In one of our institutes treating 23,000 persons yearly, applicants are obliged to answer under oath that they are unable to pay

for treatment or be refused. I personally know of patients well able to pay who have recived treatment at this institution, perjuring themselves in order to obtain it. Any person so lacking in self-respect as to apply for free treatment will not hesitate to commit perjury to avoid paying for services. Thus to the tendency to pauperization is added the moral degradation consequent in perjury. It establishes the fact that our citizens take to anything, for they take to perjury like ducks to water.

LACK OF CARE IN HANDLING CONTAGIOUS DISEASES.

Almost any form of contagious disease may be found in the waiting room of the well attended dispensary. It is not an uncommon occurrence to find infants or children with diphtheria or the early stages of scarlatina or measles, while adults in the later stages of consumption fill the cuspidors and dark corners of the room with ejecta from the lungs. All mingle together for hours without any attempt being made to isolate or separate.

LACK OF INSPECTION OR SUPERVISION.

The authorities take no notice of the existence of these institutions, though many are of low standard. There is, besides, an unwarrantable distinction made in this and other charities. Ask the county agent over the 'phone for medical relief and a physician is sent at once. No questions are asked, no reference is required. If the individual asks for rations—the average cost of which per year for 29,248 applicants who received aid during the year 1905 was $2—a searching investigation is made before relief is given. If a physician's services are needed, no investigation is made, but strict inquiry is necessary in order to receive 30 cents' worth of groceries.

LACK OF SEPARATE WAITING ROOMS FOR MEN AND WOMEN.

In every institution where treatment is accorded to both sexes, patients are obliged to mingle together. It would appear that this would defeat the philanthropic purpose of an institute to a great degree, in that no respectable modest woman could submit to huddling up alongside of some big buck from the tenderloin, a sot from the river dock, or a syphilite from whom the powerful odors of carbolic acid and iodoform emanate. None of the thirty-four institutions reported on have any properly equipped waiting rooms.

LACK OF SYSTEM IN KEEPING RECORDS OF PERSONS TREATED.

Fifteen of the thirty-four dispensaries have no record of the number of persons treated, and nineteen of the thirty-four have no record of the number of treatments given. Records should be kept and it should be the business of some one officially connected with the dispensary to note the data every year and to determine the per cent. of our inhabitants receiving medical charity compared with those receiving the other forms of relief.

This paper is in no sense a report of the committee on abuse of medical charity, but is merely intended to emphasize some of the striking

facts so far elicited in the hope of awakening discussion and of calling attention to present conditions. It is hoped that a complete report can be presented in a few weeks. The facts already discovered show that at present there are far too many free medical dispensaries in Chicago; that the existence of the great majority can not be justified by the only two legitimate reasons, viz.: relief of the worthy poor and the providing of proper clinical material for medical students; that, owing to the carelessness of our profession, unworthy and unnecessary dispensaries are exploiting both the profession and the public; that the number of persons annually receiving free medical services, approximating about 300,000, is vastly out of proportion to the number in our city actually entitled to such charity, and that, through the competition for patients, a large portion of the community is being systematically pauperized, resulting in great moral loss to the public and undeserved financial loss to the profession. A strict investigation and supervision of dispensaries should be inaugurated. Worthy and properly conducted dispensaries should be distinguished from unnecessary and loosely conducted institutions, and the latter class should receive the disapproval of the organized profession. No ethically disposed physician would allow himself to be connected with a dispensary which did not bear investigation.

THE SERUM DISEASE.*

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CHICAGO.

Since the use of therapeutic sera is becoming so common of late years and since they are being used for an ever-increasing number of diseases, it is well for us to consider the group of symptoms which occur as a result of their use. Heretofore we have been satisfied to dismiss these manifestations by calling them a serum exanthem or a serum arthritis, but a careful study shows that there is a definite symptom-complex which occurs with sufficient regularity to justify the designation, "The Serum Disease."

This disease occurs after the hypodermic injection of horse serum, and the frequency of its appearance and the distinctness of the symptoms will depend upon the individual disposition of the patient and upon the quantity of serum used. It is not the toxin or the antitoxin which the serum contains which is the cause of the disease, because the injection of normal untreated horse serum will produce the reaction as quickly and as frequently as a therapeutic serum.

As a rule, the clinical picture is somewhat as follows: From seven to twelve days after the serum injection, the patient begins to have fever, accompanied by a skin eruption, usually urticarial in character, a swelling of the lymph glands, generalized edema, a leukopenia and occasionally arthritis and albuminuria. The disease may last two or three days or in severe cases after the use of large quantities of serum some of

* Read before the Chicago Medical Society, May 29, 1907.

the above symptoms may persist for three or even four weeks. The course of the disease is always a mild one and none of the symptoms become urgent, neither are they followed by complications or sequelæ.

INCUBATION PERIOD.

In the majority of cases the time from the serum injection until the appearance of the first symptom, which is fever or the exanthem, varies from eight to twelve days. During this time the patient is free from any signs of this disease, and, as the fever or rash comes on suddenly, there are practically no premonitory symptoms.

A peculiar and interesting fact is, that cases which have received a former injection and ten days or more after the first are injected a second time with the serum will have a shorter incubation time, depending on the length of the interval between the first and second injection. That is, if the patient receives a second injection in from twelve days to six months following the first, he is almost certain to have an immediate reaction and the disease manifest itself in a few hours.

If the second injection follows the first at a longer interval, say from six months to a few years, the incubation time is shortened to five to seven days. Apparently the first injection of the serum puts the patient in a sensitive or susceptible state, so that a second injection occurring later than twelve days after the first shortens the incubation to a period varying from a few hours to five or six days.

FEVER.

This is perhaps the most constant single symptom of the disease and occurs in almost every case. The fever lasts two or three days in slight cases and from two to three weeks in severe ones. It is usually remittent in character, with an afternoon rise and a morning decline, the daily difference varying from one to four degrees. The duration and intensity of the fever is dependent partly upon the quantity of serum used and partly upon the individual disposition. Hence, after small amounts, like the ordinary dose of diphtheria antitoxin, the fever, if it occurs, lasts only two or three days, whereas following the enormous dose of scarlet fever serum sometimes given the fever may last two or even three weeks. Accompanying the fever the patient usually has some degree of restlessness, aching, irritability or malaise, as in other febrile conditions.

The pulse is accelerated to a degree corresponding more or less with the temperature.

ERUPTION.

The exanthem and the fever constitute the two most frequent symptoms of the disease. There is the greatest diversity in the appearance of the eruption. In a majority of the cases, the rash is urticarial in character, but in other cases it may be measly or scarlatiniform or polymorphous.

The eruption usually begins in the neighborhood of the point of the injection and spreads from there quickly and more or less symmetrically over the rest of the body. When belonging to the urticaria group, the

rash is composed of the typical wheals surrounded by reddened areas which may become thicker and confluent and sometimes edematous, always accompanied by an intense itching. This urticaria eruption is of short duration, seldom lasting longer than two or three days. When the exanthem is measly or scarlatiniform, it often occurs subsequent or as a sequel to the urticaria, so that the same patient may have two or three forms of rash.

ADENITIS.

The swelling of the lymph glands is a regular symptom and often precedes the fever and exanthem. The glands in the neighborhood of the injection area are the first to be infected, other glands being involved later. For instance, if the injection is made in the skin of the abdomen, the inguinal glands of the same side will swell first, then the axillary glands of the same side, and later perhaps the inguinals of the opposite side. The adenitis increases until the height of the fever and the exanthem is reached, when the size of the glands is marked and they are tender on pressure. As the disease subsides the glands do likewise. No case has been noticed in which they have been suppurated.

EDEMA.

Edema is a fairly constant feature of this disease. It is more or less generalized, but affects principally the face and dependent portions of the body and in severe cases can be easily seen. However, even in the slightest cases, we may demonstrate its existence by carefully observing the body weight, as is done to show the amount of edema in cases of nephritis. By weighing the patient at the same hour each day we will find that a temporary rise of the weight curve above normal will show the amount of edema. The duration of the edema corresponds more or less with the length of the disease, disappearing as the other symptoms subside.

ALBUMINURIA.

Albuminuria occasionally occurs, usually at the same time as the edema, although the edema often occurs without any signs of albuminuria or kidney involvement. The albumin content of the urine, when occurring, is always small in amount, sometimes only a trace being perceptible, and microscopically we find in the sediment a few hyalin casts and red blood cells. Of course, we must always bear in mind the possibility of a nephritis following the original disease to cure which the serum was given, as, for instance, diphtheria or scarlet fever. A careful consideration, however, of the albuminuria as it occurs in these diseases and in the serum disease itself will usually enable us to decide as to the cause.

BLOOD FINDINGS.

The red cells seem to be little disturbed, but it is an interesting fact that a count of the white cells will usually show a leukopenia during the height of the disease, the number of leucocytes in a cubic millimeter often dropping to 2,500 or 3,000. This low count seems to be due to a partial disappearance of the polynuclear cells, the lymphocytes appar-

ently remaining unchanged. Wright,[1] of London, found, some years ago, that the coagulability of the blood is diminished during this disease.

ARTHRITIS.

In a very small number, perhaps 1 or 2 per cent. of the cases of serum disease, the patients will complain of pain in the joints. The articulations most frequently affected are those of the hand and wrist and knee, although any of the others may be involved. No change in the joint is apparent on examination. There is no swelling or redness, but considerable pain is felt on motion and the patient may be quite uncomfortable as a result. This symptom, however, is of short duration, disappearing in a day or two or in a few days at the most.

The mucous membranes of the mouth, throat, nose and eyes are not affected in the serum disease.

DIFFERENTIAL DIAGNOSIS.

This disease must be differentiated from other forms of urticaria, from the drug eruptions, from measles and from scarlet fever. In the ordinary urticaria there is no fever, no glandular enlargement, no history of a previous injection, but often of a digestive disturbance.

Then, too, the serum exanthem appears first and worst around the point of injection.

In the drug eruptions, also, there is no fever nor adenitis, and by withholding the suspected drug the rash quickly subsides.

Of most importance is the differentiation from measles and scarlatina. As against measles: 1, The serum exanthem appears seven to twelve days after the injection; 2, the rash begins at the point of injection; 3, the glandular swelling; 4, the absence of mucous membrane involvement.

In some patients with a scarlatiniform exanthem it is almost impossible to decide between scarlet fever and the serum disease. In favor of scarlatina are the following: 1, The initial vomiting; 2, high fever; 3, angina with the typical tongue and oral mucous membrane.

OCCURRENCE.

In what per cent. of cases injected with horse serum will this disease occur? This depends almost entirely on the amount of serum injected, and hence it is hard to give accurate figures.

Pirquet and Schick, in their work,[2] give the best description of the serum disease, and they quote statistics to show that it appears in from 10 to 20 per cent. of the cases after the injection of small quantities, such as diphtheria antitoxin. But after the larger injections, such as 100 to 200 c.c. of scarlet fever serum, the disease occurs in 85 per cent. of the number. This seems to show that the susceptibility to the disease is universal, and that if the dose of the serum was still further increased the disease would manifest itself in practically every person injected.

The above facts are true of cases injected for the first time. Patients

1. Wright: Lancet, Jan. 18, 1896, and Sept. 19, 1896.
2. Pirquet and Schick: Die Serumkrankheit, Vienna, 1905.

injected a second time, ten days or more after they have been sensitized by the first injection, are almost certain to have the disease in every case.

CAUSE.

What is the cause of the serum disease? Various theories have been advanced, none of which is satisfactory. Ehrlich's side-chain theory has been invoked to explain it, and the formation of antibodies or of precipitins in the blood has been suggested as a cause, but the fact remains that we do not yet know what the complex organic processes are which unite to form this reaction.

In this connection some valuable work has been done by Rosenau and Anderson, of the United States Hygienic Laboratory.[3] They experimented with the injection of horse serum in guinea-pigs, and some of their conclusions are interesting. They found that normal or antitoxic horse serum is harmless when injected into a guinea-pig, but is poisonous to a guinea-pig which has been injected with horse serum ten days or more previously.

Diphtheria or other antitoxin plays no part in this poisonous action. All forms of therapeutic sera are equally poisonous; the so-called "refined and concentrated" and the dried serum being no exception.

Guinea-pigs may be sensitized to the toxic action of the serum by feeding them with horse serum or with horse meat as well as by injection.

If man can be sensitized in a similar way by the eating of certain proteid substances may not this throw light upon those interesting and obscure cases in which the eating of fish, sea food and other articles of diet habitually causes sudden and sometimes severe symptoms?

Rosenau and Anderson conclude by stating that they believe man may be rendered sensitive to the injection of a strange proteid substance, as is the case with the guinea-pig and other animals, and that this fact may account for some of the occasional serious symptoms following the use of a therapeutic serum.

TREATMENT.

The treatment of a case of serum disease must be largely palliative.

For the fever, hydrotherapeutic measures should be tried, if necessary.

For the intense itching of the eruption, bathing with a solution of sodium bicarbonate or the use of a menthol ointment is often of benefit.

The edema and albuminuria are never serious enough to demand treatment.

It has been found that the salicylates have little or no influence on the arthritis of this disease. For the painful joints, hot applications and limitation of motion give the most relief.

In regard to prophylaxis, I believe we may reasonably expect that in time the poisonous element in the horse serum will be discovered and eliminated from it. Until then other measures have been suggested. As was mentioned, Wright[1] called attention to the diminished coagulability

3. Rosenau and Anderson: Bull. No. 29, Hygienic Laboratory, Washington.

of the blood following serum injections and he suggested the use of the salts of calcium to prevent the occurrence of disagreeable symptoms.

Following this suggestion, Netter,[4] in Paris, experimented with a series of 258 cases injected with diphtheria antitoxin in which he gave 15-grain doses of calcium chlorid on the day of injection and on the two days following. Of these, only 12 had skin eruptions. Of 258 control cases to whom no calcium was given, 35 had eruptions, apparently showing that the disease occurred only one-third as frequently following the administration of calcium chlorid. Further experiments along this line should be made to determine the dose and form of calcium salt necessary to get the proper effect, also to ascertain the best time to give the calcium. It will probably be found more effective to administer the calcium treatment from the sixth to the twelfth day following the injection, as that is the time the serum disease manifests itself.

Furthermore, in giving serum injections we should so time them as to avoid sensitizing the patient. That is, we should give one large dose of serum at the beginning or several smaller doses during the ten days constituting the incubation period, because if the second injection is given after a ten-day interval the serum disease is almost sure to manifest itself at once.

CONCLUSION.

This paper is not intended in the slightest degree to detract from the value of the therapeutic sera nor to advise against their use, because, in contrast to the good results of serum injections, the slightly disagreeable features of the serum disease need not be seriously considered.

But the writer would suggest the consideration of this disease in explaining some of the cases of fever or other obscure symptoms following the serum treatment, and he would also make a plea for the more careful study and experimentation in such cases, as we may thereby obtain information enabling us to prevent its occurrence.

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THE SURGERY OF THE KIDNEY.*

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CHICAGO.

Because of the limited amount of time at my disposal, and the great breadth of the subject assigned to me, I will limit myself, first, to the presentation of one case or specimen representing each type of lesions discussed, the material being mainly from the joint clinical material of Drs. Besley, Kanavel, and myself at the Post-Graduate Hospital. Second, the diagnosis of surgical kidney lesions. Third, the surgical technic.

Considering kidney lesions as a whole, we at once recognize that all

4. Jour. A. M. A., Aug. 18, 1906, p. 511.

* Read at the Douglas Park Branch, Chicago Medical Society.

of our recent advances in diagnostic ability have been along the line of objective findings, and mainly in the development of technical methods. These, I take it, will be of the greatest value as matter for discussion, and I will consider them later.

ABNORMAL MOBILITY.

We recognize first, that normally the kidney has a slight degree of mobility, averaging about one inch in the long axis of the body. It lies in a bed of fat, between two layers of fascia that have been described by Gerota as a distinct capsule, but which most English writing anatomists do not seem to differentiate from the stroma in which the fatty capsule is imbedded. This capsule I have been able to demonstrate in the cadaver and utilize in operations for fixation of the kidney, as made up of a posterior layer arising from the sides of the bodies of the vertebræ passing laterally behind the kidneys, upward to the diaphragm and downward to be lost in the pelvic fascia; and an anterior layer, distributed over the same area, but lying in front of the kidney and meeting and becoming continuous with its fellow on the opposite side on the anterior surfaces of the vertebræ. This seems to me to be the most important factor in retaining the kidney in its position. It has no distinct ligament or, ordinarily, "meso-nephron." The pedicle, the peritoneum and intra-abdominal tension are probably all factors. We use the term "abnormal mobility" as fully descriptive of the type of disease; the terms "movable" and "floating" kidney as applying merely to degree and not to kind of lesion; that is, we do not differentiate a floating kidney anatomically from a movable kidney; a floating kidney is one that is very movable, whether because of a particularly lax Gerota's capsule and peritoneum or because of a true meso-nephron is immaterial.

One of the patients that I present to you to-night had a floating kidney that could be pushed over to the left of the median line and into the right iliac fossa, yet had no meso-nephron. Considerably more motility than just enough to demonstrate it is present in a large proportion of persons examined for the condition, but since there is an insensible gradation from normal to abnormal mobility, percentages given are practically useless, presenting the absurd variation as given by various authors from 3 to 50 per cent. in females; all give the percentage in males as small. It is a fact that in a large proportion of our female patients mobility of the kidneys, and especially of the right kidney, can be demonstrated, but I would suggest that the presence of mobility alone should not be considered an indication for treatment; that to justify interference of any kind, palliative or surgical, we must have distinct symptoms or definite objective evidence that harm is being done or symtoms caused.

The symptoms of abnormally movable kidney are hard to classify—there are recurring attacks of pain, varying greatly in severity, but often reaching the extreme grade that is found in renal stone; between attacks there may be perfect relief or a constant sense of discomfort. The pains are felt in the immediate kidney region and often are also reflected down-

ward toward the bladder. The severe attacks are constantly accompanied by nausea and at times by vomiting. There is a well-marked symptom group, consisting of violent colic with nausea and vomiting, that has been known for years as "Dietl's Crisis." Often there is considerable gastric distress, with an uncomfortable sense of dragging or weight or actual pain in the lumbar region, and these patients often appear to be neurotic in a high degree, the real cause of their trouble being entirely overlooked if the practitioner has not acquired the habit of making a complete physical examination of his patients. The urinary findings are not constant. Both of the patients whom I present to you for examination have shown urine varying from perfectly normal to markedly abnormal, showing blood, pus casts and albumen. One patient showed blood, pus cells, and albumen in one specimen passed during an attack, and normal specimens on two different days within a week of the attack. As is usually the case, blood and pus cells were present in microscopic amounts. That the sequelæ of this condition are not to be considered the least dangerous element, I wish to call your attention to the fact that of the few patients that I am presenting to you to-night one dates a pyelonephritis from this condition, while another has had an acute pyelonephritis while under observation within the past month.

At first thought one would say that an abnormally movable kidney is necessarily a palpable kidney and that its mobility could, therefore, always be demonstrated, but this is not true. A patient who is very stout, or who has a very long chest, or one that has a very great antero-posterior diameter, may easily have a freely movable kidney entirely out of reach of the examining hand; moreover, the kidney of a patient of ordinary build will often slip up into its fossa and be no longer demonstrable.

PERINEPHRITIC ABSCESS.

Let us first of all remember that a perinephritic abscess is not necessarily secondary to or in any way associated with renal disease. Among the conditions entirely foreign to kidney disease, that have a real clinical interest as possible etiological factors in perinephritic abscess, are: Appendicitis, the infection extending up along the posterior wall of the colon; cholecystitis, suppurative or gangrenous, the pus finding a plane of cleavage downward behind the colon; perforated duodenal ulcer; and empyema, with infection extending through the diaphragm, forming a subphrenic abscess and, by extension, a perinephritic abscess.

Perinephritic abscess may apparently be primary, no primary focus elsewhere being discoverable. It has followed a blow, but here the possibility of extravasation from the kidney must be considered. I have had one case develop in the course of scarlet fever, without discoverable involvement of the kidney, which probably means that bacteria excreted by the kidney caused a cortical infection with extension outward. By far the great majority of cases are secondary to renal infection, an acute pyelonephritis from stone, or ascending ureteral infection being the most common cause. In one of the cases presented to-night a tuberculosis of the kidney was the primary factor.

The symptoms are those of a localized infection, and the physical signs must be depended upon to determine the location. It must be borne in mind that, while in common with all acute infections, severe pain is likely to be present, the dulled sensorium from the serious septic poisoning, together with the looseness of the tissues about the kidney, allowing considerable extension before the pus becomes under much tension, combine to mask the true nature of the ailment which may be entirely overlooked unless a systematic examination of the patient be made.

ACUTE INFECTIONS OF THE KIDNEY.

We are principally concerned with ascending infections arising from previously existing infections lower in the urinary organs, and with hematogenous infections. Though a recognized lesion for many years, considerable impetus has recently been given to the study of the latter type of infection, and we recognize an acute septic nephritis of embolic origin exactly analogous to that of an acute osteomyelitis; that is, we have the development in a previously healthy kidney or in a kidney whose resisting power has been lowered by trauma from without, or by other analogous factors, or an acute suppurative infection in the parenchyma without ascending ureteral infection, or infection from adjacent organs, the source evidently being bacteria carried by the blood stream. Brewer states that acute infections of this type are usually unilateral, but may be bilateral.

Multiple foci of suppuration are found throughout the kidney parenchyma, evidently the result of an embolic process. Clinically these cases are characterized by the signs of intense sepsis, slight changes in the urine, consisting of a few blood and pus cells from the affected side and, locally, some enlargement of the kidney, with muscular rigidity, and sensitiveness to pressure. It is not sufficient in these cases to make a diagnosis of infection, for the ordinary surgical treatment by incision and drainage will obviously be inadequate; no single incision can possibly drain the multiple, unconnected abscesses. In the paper above referred to Brewer shows the fatal outcome of intervention of this form. Nothing short of excision of the kidney suffices; it will at once be evident that nothing short of an exact diagnosis of pathological condition will do if we are to inaugurate successful treatment. A study of reported cases reveals the difficulty of doing this. We can locate pus in the kidney; we can recognize in the absence of infection of the lower urinary organs a hint of the probable nature of the case, but it is not until we cut down upon the organ that the presence of multiple abscesses can be determined. They can usually be made out studding the surface of the organ, visible through the capsule, though incision of the kidney may be necessary to observe them. It is here that the surgeon must recognize the condition that he has to deal with and the necessity for radical action.

I wish here to emphasize the fact that this lesion must be a rare one and that we are extremely liable to confuse with it a type of infection that is pathologically a true ascending nephritis, though no lesion of the lower urinary tract may be discoverable. To make myself plain, remem-

ber that bacteria reaching the blood stream are very rapidly excreted by the kidney. For example, Fütterer has shown that a few minutes after injecting a culture of pus cocci into the jugular vein of a dog they may be discovered in the renal cortex and urine.

If now one of the ureters be tied, preventing the escape of bacteria on that side, a unilateral infection will follow, which is truly an ascending infection, the bacteria being excreted into the tubules and pelvis of the kidney and then, prevented from escaping, exerting their pathogenic action. I am indebted to Prof. Zeit for the information that he has personally demonstrated this action, and he points out that any factor which interferes with the ready escape of urine from the kidney acts in the same manner. The specimen of hypernephroma that I here present is a perfect illustration of the point that I wish to make. The patient entered the hospital with a tumor of the kidney. While under observation she developed a facial erysipelas which caused her death. There had in the meantime been *no* instrumentation of any kind, nor had there been any evidence of infection about the bladder. The postmortem revealed a hypernephroma, with a suppurative pyelitis of an ascending type, apparently an exact reproduction of Dr. Zeit's experiment on the dog, the tumor acting as the obstructing factor.

Acute renal infections of the ascending type are practically always preceded by evidence of infection of the lower urinary tract, which materially helps in directing attention to the nature of the trouble. Cystitis, of whatever origin, comes first in the list of exciting causes. The upward extension of a bladder infection to the ureters and kidneys is not, however, the simple matter that it may appear to be at first thought. The structure of the ureteral orifice at the bladder is beautifully adapted to protect the ureter and parts above from a retrograde flow of infected urine. The ureter enters the bladder by passing obliquely through the wall of the latter, so that distension of the bladder tends to close the opening and the orifice is further protected by a distinct sphincter which is closed through its normal tonicity except during the actual passage of urine; that is, urine does not trickle mechanically from the ureter into the bladder, but is forced into it in jets, during which the sphincter relaxes, to immediately contract down until the next jet of urine is forced through.

Why, then, should cystitis be the most frequent cause of infection of the kidney? We must recognize the mechanical factor of the damming back of the infected urine, with an ultimate giving away of the protecting checks at the ureteral orifice, as the prime factor in the ascending infection. There is, first, an infection of the urinary bladder, the source of which, for the present, is of no moment.

When drainage is perfect recovery from cystitis is usually rapid. The impossibility of giving the parts complete rest has an important bearing and may seriously delay recovery, but where the emptying of the bladder is materially interfered with, as by ureteral stricture or prostatic enlargement, we have, first, recovery interfered with as in poorly drained abscess elsewhere, with, second, an ultimate giving way of the sphincter

and dilatation of the ureter, converting bladder, dilated ureters and the pelves of the kidneys into one large, poorly-drained sack, with infection distributed throughout.

We must include also in ascending infections those cases of interference with drainage caused by calculi, ureteral torsion, etc., where bacteria excreted by the kidney are rendered capable of pathogenic action as explained above. The mechanical factor comes into play even in aseptic lesions in which imperfect or difficult emptying of the bladder results. The gradual giving way of the ureters and pelvis and ultimately of the calices results in a lowered resisting power, which renders the parts particularly liable to infection on the first passage of sounds or catheterization. Renal calculus carries with it a still further source of infection, since it is itself a product of bacterial origin and may itself contain the bacteria which, acting upon the tissues already injured mechanically, are enabled to start up active suppuration.

Acute infections of the kidney, of whatever origin, are characterized by the usual signs of infection, the severity of which depend upon how well ureteral drainage is able to take care of it. Thus an infection about a calculus in the renal pelvis may often go on to the very extensive destruction of the organ without marked clinical evidence of its progress, so long as the ureter remains unobstructed. At the other extreme come the very violent evidences of sepsis, with a fatal termination within a few days, where the infection begins in the parenchyma or the ureteral drainage is blocked.

The urinary findings are particularly interesting in renal infections. In one of the patients here presented, where suppuration supervened upon a floating kidney, no pus was found in the urine, though all the other evidence pointed so strongly to the nature of the condition that the patient was sent to the hospital and prepared for operation; within a few hours of the time set for operation pus appeared in considerable quantity. We had here apparently a complete obstruction of the ureter, resulting in a normal urine being passed by the patient. Usually pus is present in the urine from the beginning. The reaction of the urine is normally acid, and the presence in acid urine of pus in moderate amounts should suggest the likelihood of a renal origin, where the urethral channel and prostate are uninvolved, but these findings must be proven by obtaining the specimen by segregation or urethral catheterization to have a definite value. We may, in rare cases, have an alkaline, purulent urine coming from a dilated suppurating pelvis and kidney, a pyonephrosis when drainage is poor and the condition has gone on for some time.

TUBERCULOSIS OF THE KIDNEY.

As in the case of pus infection, tuberculosis may be the result of an ascending infection, the primary lesion being in the bladder, prostate or epididymis, or it may be primarily a kidney lesion of hematogenous origin, as in the case of a bone or joint tuberculosis. I am able to present to you one patient in whom a careful examination, including repeated cystoscopic examinations, reveals no other tuberculosis of the

urinary tract and one who gives a history of tuberculosis of the prostate and epididymis. Clinically, tuberculosis of the kidney often manifests itself first by the bladder symptoms. The first case presented to you was treated for a "cystitis" long before her kidney lesion was recognized, though the bladder shows no evidence of previous disease. Ultimately the clinical symptoms resolve themselves into those of an active tuberculosis; that is, an evening temperature with progressive loss of weight, and the local findings of an enlarged kidney, sensitive to pressure, with pus and tubercle bacilli in the urine. Pain is a variable finding, being oftentimes absent, and again of a sharp, severe character resembling the colic of renal calculus.

TRAUMATISM.

Kidney injuries form a group whose importance will be readily recognized. A very large proportion of the more serious type require immediate recognition and interference if we are to prevent a fatal termination. It will not be necessary to dwell upon the vascularity of the organ; we all recognize that. We are all aware of how profuse hemorrhage may be when rupture occurs. Let us separate a subgroup from the remainder, the gunshot wounds of the kidney. Surgical intervention in gunshot wounds of the abdomen in civil life is no longer a matter for discussion. Where a gunshot wound is so located, or the *x*-ray or other evidence is such that a bullet could have entered the abdomen, exploration is indicated.

The kidney is most frequently wounded by bullets passing into or through the abdomen, but may be reached by a bullet which enters from the side without entering the peritoneal cavity. There is usually profound shock, partly from hemorrhage, but probably also due to traumatism inflicted upon the nervous system, whose mechanism we are not familiar with. What we wish particularly to call attention to is the fact that we are unable to differentiate clinically between the symptoms of shock and those of hemorrhage, except when the latter comes on rather slowly, and even here the evidence may merely point to prolonged shock. It is, of course, clear that we may have profuse hemorrhage without external bleeding, even though the wound of entrance or exit be directly over the kidney. We meet with a very variable amount of damage done to the kidney by a bullet. A part of an end or of the free border may be cut off, or the bullet may pass through, leaving but a small track of injured substance. It may pass through the pedicle, cutting across blood vessels or ureter. A bullet entering the kidney is, however, very likely to produce an extensive rupture of the kidney, as though it had an explosive effect. To understand the nature of such extensive damage inflicted by a small missile we must look upon the kidney as a semi-liquid mass inclosed in a sack, the contents reacting as would a confined liquid to the blow; that is, the force of the blow is transmitted in all directions through the kidney as it would be in a liquid, thus rupturing its capsule extensively and tearing the kidney substance.

In actual practice the most common finding in injury to the kidney

is blood in the urine, which should always be sought for at once. The greatest danger is that of overlooking the injury by not making a sufficiently careful examination. In an exploratory laparotomy we may find no blood in the peritoneal cavity, because of the small opening in the peritoneum and fascia; or there may be a small amount, the source of which is not located. It is necessary to get a good clear view of the field to discover such a perforation. Where we are still in doubt we should examine the kidney itself, either by tearing through the peritoneum or by making a second incision through the lumbar region. Not a few kidney injuries have been overlooked because damage to other viscera was supposed to be sufficient to account for the symptoms, and the further search was stopped.

Injury aside from gunshot may follow blows either on the abdomen or in the lumbar region, or crushing, as between or under vehicles. All grades of injury are met with, from the slightest contusion to cases in which the kidney seems to be torn completely from its moorings and lies free in its fossa. The patient whom I present as typical of this lesion was kicked in the lumbar region by a horse and presented a tear of the lower pole of the kidney, with a complete separation of a small fragment of kidney substance. Clinically, we lack here that very positive incentive to radical work, the bullet wound.

In what cases is exploration called for and when are we justified in waiting for more definite signs? It is impossible to give a categorical answer to this query, and the same applies to injury to the other abdominal viscera. The history of a blow over the abdomen or kidney region, with blood in the urine, evidence of more than momentary shock, or hemorrhage; muscular rigidity which may be due to injury to the muscle itself; evidence of injury to other abdominal viscera, as blood in the stools or vomitus or localized pain and sensitiveness; all of these must be taken into consideration, their relative value must be weighed in the individual case and a decision must be arrived at at once. It is evident that here must come into play the judgment that is the result of study and experience and can not be conjured up by reading over the differential diagnosis, however clearly it may be written out.

PALPATION OF THE KIDNEY.

First, the patient must be placed in the proper position, and here is the first source of trouble. It will not do to simply place the patient on his back on the table and work the fingers down under his ribs. The kidney is a very deeply-placed organ, and absolute relaxation of the abdominal walls is essential to a successful examination. To make the patient comfortable place him on his back with his legs well drawn up, his knees resting together, his head and shoulders raised, but resting comfortably on pillows, his head flexed on his chest and his mouth open. His arms should rest by his sides. His mental state must not be that of fear that we are going to jab him suddenly or cause him pain. We show him how to breathe, so that he does not call into play his abdominal muscles; in other words, we must get the most complete relaxation of

every muscle of his body that we can. If he raises his head that action alone is enough to cause his abdominal muscles to contract. If he draws his legs up and holds them in position without resting them his abdominal muscles will not relax. If his arms are under his head his abdomen will be rendered tense. With the patient in the position that we have described, sit on the table or bed facing him. Place the tips of the fingers of one hand in the space between the twelfth rib and iliac crest; place the other hand rather flat on the abdomen, with the ends of the fingers coming about opposite to those of the other hand. No great pressure should be used with either hand, and it is particularly important that the tips of the fingers should not be jabbed into the patient, since this always produces an involuntary muscular contraction. The patient should now be made to take deep breaths by using his diaphragm during inspiration and by letting the air escape from his lungs without muscular action; that is, he should breathe normally, except that his diaphragm action should be rather more pronounced and his breathing should be through the open mouth rather than through the nose. Often in multiparæ and occasionally in men with their abdominal walls relaxed the lower pole of the normal kidney can be palpated. The right kidney can more frequently be palpated than the left, being placed somewhat lower. If we are unable to palpate the organ the patient should be stood up, leaning forward against a firm body so as to get as much relaxation as possible; an abnormally movable kidney will often slip down to within reach of the fingers, which in the supine position would rest in its fossa. Occasionally even the erect position will not suffice to bring within reach a kidney that we know from previous examination to be freely movable, and the examination must be put off for another day; sometimes placing the patient on his opposite side will bring results, or we may possibly be justified in causing the patient to take some violent exercise to bring it within reach.

A movable kidney is usually best recognized as a smooth rounded body slipping out from the fingers' grasp. Its feel is so characteristic that we are not likely to mistake it for any other structure; we are more likely to err in the opposite direction. With a very movable kidney we may be able to grasp the entire organ, getting the fingers together above its upper pole or even drawing it down into the pelvis or to the other side of the median line. An enlarged kidney, if it reaches any considerable size, always comes within reach of the fingers. We must differentiate it from several other structures.

A projecting lobe of a deformed "corset" liver may occupy a position just anterior to the kidney. Its outline and its range of motion during respiration may closely simulate that of the kidney. Like the latter, it is retrocolic, and unless it can be felt to be continous with the liver, we have no means of making a correct diagnosis. I have once seen such a lobe cut down upon under the mistaken diagnosis of movable kidney. The enlarged gall bladder can not be drawn downward—its lateral motion is limited by its fixed upper end around which it rotates. It is not as broad as a kidney, though it may be quite long enough to reach well below

the umbilicus. I do not, of course, refer to those curiosities of gall bladders holding pints of fluid. It may often be pushed up toward the renal fossa, but can not be made to stay there after withdrawing the pressure. Distending the colon with gas or air by means of an ordinary bicycle-tire pump will usually show the relative position of the two, but is not to be absolutely relied upon, as it may push a gall bladder up out of the way or actually lie above it.

The spleen is differentiated by its sharp anterior border—by its notches—by the effect of distention of the colon; by its outline, which is that of an ovoid with its long axis placed obliquely from beneath the costal arch downward and well over toward the median line, while the long axis of the kidney ovoid is almost parallel with that of the body. Tympany (colonic) may be made out below and *behind* the splenic tumor, not the renal tumor, the latter having its origin *back* of all the hollow viscera, and pushing them *forward* in its growth.

Pyloric tumor has been mistaken for a kidney, and recently in a patient of my colleague, Dr. Kanavel, I mistook a carcinoma of the colon for a kidney, the examination being limited to palpation. Muscular rigidity, localized about the region of the kidney, is often significant of an inflamed organ or a localized peritonitis secondary to an inflammatory process in the kidney.

The use of the *x*-rays as a means of determining the presence or absence of stones has become a procedure of absolute necessity. The results have constantly improved with improvement in apparatus and technic, until to-day we are able to hear reports of long series of cases in which the percentage of error becomes almost negligible.

The examination of the separated urines, by means of the various segregators and separate catheterization of the ureters, is often absolutely essential to exact diagnosis. The simplest means of separating the urines of the kidneys is by one of the various types of instruments so made as to form an artificial divide or water-shed in the bladder. The Harris segregator is the instrument most in use here, and consists of a double catheter which, after being passed, is so placed that one end lies on either side of the middle line; another section of the instrument is passed into the rectum or vagina, and by means of a spring is held up against the floor of the bladder, pushing up between the two catheters; each catheter thus gathers the urine of one ureter only. It is very satisfactory, but is subject to some errors which lessen its value. Aside from avoidable errors due to careless placing, blocking of the small catheter openings, etc., abnormal position of the ureteral openings, asymmetry of the bladder, thickened bladder walls, etc., must be kept in mind as possible sources of error.

Catheterization of the ureters gives us a method of gathering the urines that approaches exactness. We should hesitate to perform this operation through an infected bladder, lest we cause an ascending infection.

Segregation and ureteral catheterization have enabled us to dispose absolutely of exploratory cutting down upon the opposite kidney before

doing a nephrectomy; they have given us a means of obtaining an exact knowledge of the kidneys otherwise absolutely unattainable. Let me remind you that tuberculosis of the kidney is unilateral in at least 50 per cent. of the cases and that blood may appear in the urine before a malignant tumor has reached a size to make it palpable, and that in both cases the examination of the separated urines gives us the most positive information as to which organ is involved.

Cystoscopic examination alone may be of the greatest value without catheterization. The relative condition of the two meati can be studied; after considerable experience is acquired the eddies caused by the entrance of the jets of urine can be recognized, especially if the patient be given indigo carmine beforehand to color the urine, or if the urine contain blood.

Marked hyperemia or ulceration can at times be detected about the ureteral meatus of a tubercular kidney. The relative functioning power of the two kidneys may be estimated:

First.—By estimating the urea content of the separated urines.

Second.—By finding the relative rate of sugar excretion after a subcutaneous injection of phloridzin.

Third.—By observing the relative rate of increase in secretion after giving large quantities of water.

Cryoscopy and the determination of the electrical conductivity of the blood are at present very widely discussed subjects. When a nephrectomy is indicated by the local condition the question at once arises whether the opposite kidney is capable of carrying on the work of both. It has been found that with the excretory power of the kidney normal the blood maintains a constant freezing point; that is, what chemists speak of as the "molecular concentration" of the blood is so constant that its freezing point normally varies less than 1/100°C. This is dependent upon a normally functioning kidney, which by more or less rapid osmosis maintains the blood in its normal state. Incompetent kidneys manifest themselves by an increased concentration of the blood with a lowering of its freezing point. It is maintained by men who have given considerable study to the matter that cryoscopy affords us so positive a method of estimating the functioning power of the kidneys that it must be considered as one of the essential parts of the study of cases.

It has appeared to us that the difficulty of technic and time required could hardly be given as an excuse for not using a method that chemists are agreed upon as being one of minute exactness; that if as clinicians we are unable to devote the time to it, or to acquire the necessary skill, we must call in the laboratory workers to our assistance. Electrical conductivity is dependent upon the same principle of molecular concentration of fluids as is cryoscopy, and what has been said of the latter applies to both.

Finally, I wish to call your attention to these specimens, being partly kidneys removed at our clinic and partly specimens loaned by Professor Zeit.

The first is an example of acute suppurative nephritis of hematogenous origin. Observe: Cortex studded with minute abscesses; the pyramids intact. The primary changes are necessarily in the blood vessels of the cortex, which microscopically would be found to be loaded with pus cocci.

The changes here observed are the result of a bacteriemia, and the condition is, therefore, necessarily bilateral. We may have emboli given off from a cardiac valve, but if so there will either be simple anemic infarcts or, if an acute endocarditis is present, the kidney lesion is a terminal one of no surgical importance. Compare this with specimen No. 2. This kidney presents a suppurative pyelitis, with extensive destruction of the medulla and cortex. This is a late effect of ascending infection; had the lesion been recognized early as in the other case of suppurative nephritis which I showed you, and drained early, the kidney may possibly have been saved. Remember that in neither of these cases of ascending nephritis was there any positive evidence of an infection of the lower urinary tract. In one there was a floating kidney with probably torsion of the ureter. In the other there were no definite findings.

Compare now the two specimens, one showing a tuberculosis with extensive destruction of the kidney, the other a case of pyonephrosis due to stone with equally extensive destruction. Both have large cavities; both have the cavities filled, some with pus, some with cheesey material. Compare the empty cavities of the two kidneys where we have washed out the contents; the tubercular cavities are lined with a shreddy ragged material, the pus cavities are smooth and clean. Observe in the specimen showing the hypernephroma that a pyelonephritis exists in which extension into the tubules of the pyramids can be made out. Thus this specimen shows that the bacteria acted upon the kidney from the pelvic side, though they were probably excreted by the kidney and did not reach the bladder.

SURGICAL TREATMENT.

Except for the removal of large tumors, operative attack is directed through an incision in the lumbar region, which begins above close to the junction of the twelfth rib and outer border of the thick mass of lumbar muscles, and is continued downward and forward toward and in front of the anterior superior spine of the ilium, of any desired length. Muscles and fascia fibers are quickly separated, with little sharp dissection, down to the fatty capsule. A number of details in the technic employed serve to facilitate matters materially.

ANESTHESIA.

We employ gas-ether anesthesia almost exclusively. Preliminary gas anesthesia reduces by nearly 50 per cent. the dose of ether required, and ether has not been found to be more depressing to the kidneys when involved in disease than chloroform. For opening a perinephritic abscess gas alone is sufficient.

POSITION OF PATIENT.

The patient should lie upon the side opposite that to be operated upon, leaning forward, supported by sand-bags, with a large sand-bag under the loin.

NEPHROPEXY.

The essential factor in the technic is to bring up Gerota's capsule, drawing it out of the incision until the kidney is brought up with it to the level of the fascia. The forceps grasping the capsule must take large, broad bites or they will tear through. The capsule is sutured into the fascia.

NEPHROTOMY.

The kidney should be held in the grasp of the fingers, preferably by partially delivering it; the capsule and cortex are nicked with a scalpel and the finger is then pushed through the kidney substance, as may be indicated. It is rarely desirable to incise the kidney substance with a scalpel. The finger can readily be pushed into the kidney pelvis, and hemorrhage will be much less severe than if a scalpel were used.

NEPHRECTOMY.

The incision should be long enough to give free access to the kidney and ureter, extending well down in front of the ilium. The anatomical closure of the parts may be so perfect that hernia is not to be feared. The next step is to separate kidney and ureter from peritoneum. When, after prolonged suppuration, this cannot be readily done, the safety of the patient may require that the kidney capsule be incised and its anterior portion be dissected off with the peritoneum, leaving it behind. The ureter should be removed with the kidney in tuberculosis, as it is commonly involved. This can be done readily down to within a short distance of the bladder.

CONTROL OF HEMORRHAGE.

In nephrotomy it is well to have the kidney within the grasp of the fingers before making the incision. Comparatively little bleeding will follow where the finger is used as suggested here. However profuse, it can be instantly controlled by compressing it laterally between the fingers. Packing with gauze accomplishes the same purpose, though not as quickly. In nephrectomy the pedicle is grasped with a heavy clamp, or ligated before removal of the kidney, but in the latter case the pedicle should be grasped with a pair of forceps distal to the ligature before cutting through it, to insure perfect control.

CASE OF SUPPURATIVE WOUNDS FOLLOWING ABDOMINAL SECTION.*

THOMAS J. WATKINS, M.D.

CHICAGO.

I beg leave to outline the treatment I employ for suppuration in postoperative abdominal wounds and which I believe is consistent with modern pathology and surgical physiology. I have nothing new to offer, but my care of these wounds varies much from the treatment generally used by others. Hence, my desire to bring it before you for discussion.

The principles of the treatment of these wounds are much the same as the treatment of suppurative wounds in other parts of the body. The more one studies the surgical physiology of wound repair, the less treatment he will usually employ. Aseptic methods, less drainage and interval operations have lessened very much the number of suppurative abdominal wounds. In fact, one should never get a suppurative wound unless the case is septic at the time of operation. In the septic cases much can be done to avoid suppuration in the wound, in many of the drainage cases, by bringing the drainage out at a point distant from the wound.

In pelvic surgery in the female, the drainage can usually be established through the vaginal canal. In large abdominal incisions, one can at times use a puncture wound to one side with much advantage and thus make complete closure of the incised abdominal wound.

OUTLINE OF TREATMENT.

a. Prophylaxis.
   1. Use of rigid surgical cleanliness.
   2. Interval operation for septic diseases when practicable.
   3. Avoid drainage in the wound in the absence of positive indications.

b. Curative.
   1. Use of wet dressings as long as the wound looks angry; that is, until the acute redness, induration and necrotic tissue disappear.
   2. The edges of the wound are drawn together with sterile adhesive plaster when the wet dressings are removed. Balsam of Peru is used to keep the dressings from sticking and, in case of a sinus, to prevent decomposition of secretions.

The wet dressing is used to prevent sealing of the wound by coagulation of the serum which exudes from the wound. If the amount of the discharge is small and if a dry dressing is used, the serum will coagulate and seal up the wound as effectively as could be done with collodion. The wet dressing should be covered with a non-absorbable dressing to prevent evaporation. The dressing is wet with normal saline, sterile water or a solution of boric acid. No strong germicidal solutions are used for reasons given below. The dressings are changed one to three times daily,

*Read before the Chicago Medical Society, May 29, 1907. For discussion see Page

depending upon the amount of discharge. They are not wet except when changed, as they will not get dry when properly covered. The wet dressings may be omitted when the amount of discharge is large, as a profuse discharge will of itself keep the dressings sufficiently wet.

The above treatment is all that I have used for those wounds for the last two or three years or more, and they have healed much more quickly and with less discomfort to the patient than when they were more vigorously treated.

In drainage cases the above treatment is used as soon as the drain is removed—no more drainage is inserted. In cases of fistulæ and sinuses no effort is made to keep them open at the top. The discharge is generally sufficient to keep them open. They occasionally close temporarily for one or two days and then reopen without any untoward effects, in my experience. These sinuses are not medicated as they are always due to some well defined cause which can not be removed by medicines.

Many things are done in medicine without reason as a result of custom. Good examples of this fact are procedures which are generally employed in the treatment of suppurative abdominal incisions, namely:

1. Free removal of sutures and opening up of the wound.
2. Probing of the wound.
3. Manipulation of the wound.
4. Irrigation of the wound.
5. Use of tubing and gauze in the wound.
6. Use of germicides and caustics in the wound.

The action of suppuration in wounds closed with continuous catgut sutures in layers where the treatment was carried on without the removal of the sutures is convincing that the removal of sutures in case of suppuration is not so important as formerly believed. In fact, these cases get well as quickly where the catgut sutures are used and not removed as do the cases that are closed with interrupted sutures which are removed in part to facilitate drainage. Less separation of the wound occurs in the former than in the latter, other things being equal. All of the discharge will escape through a comparatively small opening if the dressings are kept wet and if gravity is favored by the location of the wound and the position of the patient. All of the abdominal wounds in my care are closed with layers of continuous catgut sutures, unless it seems certain that suppuration will take place. In the latter case the wound is reinforced by a few figure-of-eight silkworm gut sutures in the fascia. In case of suppuration one or, at most, two, of these silkworm gut sutures are removed, but the wound is not spread open.

It is difficult to see why surgeons probe these wounds, as the probing is apt to extend the infection, injures the tissues, hurts the patient, and the treatment is not modified by the depth or direction of the wound. Manipulation of the wound may force out some discharge that would escape, tends to disseminate and injure the tissues and causes pain.

Irrigation of these wounds is the most damaging, most time-consuming and the most generally employed of any of these meddlesome procedures. The injury consists chiefly in the use of antiseptic solutions in

the wound. Experiments show that these antiseptic solutions damage the tissues in non-infected wounds and produce much more injury to infected wounds. Some injury is also done by the mechanical force to the irrigation stream. The wound repair is a very delicate network formation which is easily washed away, especially by a strong antiseptic solution. If the wound drains spontaneously why irrigate it? If the drainage is not spontaneous the surgeon should see to it that such drainage is established. One may contend that it is at times necessary to employ rubber tubes to get good spontaneous drainage. I have not seen in the last two years a case where it was necessary to keep in rubber tube drainage. The rubber tube easily produces necrosis of the tissue which it presses on, quickly becomes offensive and mechanically interferes with the wound repair.

Gauze drains which are placed in these wounds after they suppurate are more apt to interfere with than to facilitate drainage. To be kept clean it has to be frequently replaced, and the replacement causes much traumatism of the wound.

If one would stop to think it would be difficult to realize how he can use strong antiseptics and caustics in the sinuses of these wounds, or see how he can dilate, pack and scrape them when he knows that they are generally due to an infected ligature or suture and will disappear when the suture absorbs or is removed. He also knows that they are at times caused by the presence of necrotic tissue and will heal when the necrotic tissue disappears. Many of these wounds heal slowly because the reparative process is handicapped by too much treatment. It has not been found necessary to modify this treatment even in cases complicated with intestinal fistulæ.

These wounds are often much injured by carelessness as regards cleanliness. The opinion is quite general that aseptic care is not needed in the dressing of an infected wound, and in this way a mixed infection frequently results, much to the injury of the patient, and the mixed may be more serious than the original infection.

Meddlesome and painful treatment of these wounds interferes with the cheerful mental state of the patient that is essential to the free taking of food, rest and sleep, requisites to a healthful recovery.

ANATOMY OF THE SUBPHRENIC SPACE, WITH EXHIBITION OF ANATOMICAL SPECIMENS.*

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In spite of the voluminous literature and the most careful observations of pathological conditions known as subphrenic abscess published in the medical journals during the last few years, there is, I regret to say, very little indeed, written or said on the anatomy of the so-called subphrenic space.

* Read before the West Side Branch of the Chicago Medical Society, April 18, 1907.

In 1894 K. Maydl of Vienna was, to my knowledge, the first one to describe and explain anatomically the possibilities of pus collecting in the subphrenic space from different sources and organs, abdominal as well as thoracic, quite remotely situated from that space. It is only through a correct anatomical knowledge of the space and its boundaries, the organs contained therein, their relations to each other, as well as their peritoneal coverings, that a proper diagnosis so essential to successful surgical treatment can be arrived at. In 1896 Carl Beck of New York, in a very able article on Subphrenic Abscess in the *Medical Record* of February, 15, also contributed to the topography of the subphrenic space. By this term we are to understand all that uppermost part of the abdominal cavity below the dome of the diaphragm, having for its lower limitation the transverse mesocolon. Removing, then, all the abdominal viscera situated above the transverse mesocolon, we find a hemispherical cavity with its base downward, flattened antero-posteriorly and concave superiorly, and to a certain extent laterally. Now let it be understood at the outset, and I want to put myself on record, that, anatomically speaking, there is no such thing as a subphrenic space. It is only when the abdominal organs situated between the transverse mesocolon below and the under surface of the diaphragm above are displaced by some pathological process in the organs *per se*, in the tissues retaining or helping to retain the organs in their normal position, or in the structures forming the boundaries of the subphrenic hemisphere above mentioned, that a subphrenic space is created. This is a fact that will not bear any dispute from an anatomical standpoint. Furthermore, it is positively established in the minds of the whole profession that, once the abdominal as well as the thoracic and pelvic organs are not pathologically hindered or disturbed from their normal position, their relations to each other remain very constant indeed, and the superior surfaces of the viscera situated immediately below the under surface of the diaphragm, particularly the liver, fit pretty accurately to the inferior surface of that muscle, so much so that no appreciable space between the opposing surfaces can be demonstrated. I, therefore, deem it proper to consider the upper part of the abdominal cavity from the diaphragm above to the transverse mesocolon below as the subphrenic cavity and a pathological disturbance found immediately within the boundaries of that cavity is justly entitled to the term subphrenic, unless the process is limited to a particular viscus only. The act of respiration consists of two opposite movements, inspiration and expiration, which is the principal action of the diaphragm, descending in the former and ascending in the latter. It follows that the organs situated immediately below the diaphragm and in consequence thereof all the abdominal viscera perform the same movements, and hence become displaced in a vertical direction with each respiration.

Again, almost the whole subphrenic cavity is composed principally of muscular tissue and consequently has an aptitude of contraction and relaxation to a very considerable degree, thereby altering the diameters of the cavity in all directions, particularly in the transverse and antero-posterior diameters, and as the alternate relaxations and contractions of

the muscular boundaries act also in accord with the movements of the diaphragm, hence the viscera are also displaced in these directions. In other words, there is a constant gliding movement, so to speak, going on between the internal lining of the walls of the subphrenic cavity and the adjacent surfaces of the organs contained therein. The logical deduction, therefore, to be drawn from these statements is that pathological products depositing and collecting between these surfaces create a subphrenic space. With a passing apology for this somewhat prolonged introduction, I shall now proceed to describe the anatomy of the subphrenic cavity. Owing to the large size of the cavity, and in order to localize more correctly the positions of the various organs contained within it, the subphrenic cavity proper is artificially subdivided into distinct compartments by one horizontal line drawn around the body and two perpendicular lines drawn upwards on its anterior wall. From these lines imaginary planes are supposed to be continued backwards to the posterior wall of the cavity. The horizontal line is also known as the subcostal line, because it is drawn immediately below the most dependent part of the thoracic framework. The tenth costal cartilage, however, is usually selected in drawing this line, because it is very apparent from the front, and is, as a rule, stationary—i. e., fixed. While the eleventh, being a floating rib, is very movable and variable in length. Hence the subcostal line will often vary in position and consequently not correspond to the subcostal plane, which marks the inferior boundary of the subphrenic cavity and falls within the region of the transverse colon and mesocolon. By the two perpendicular lines and their respective planes, the cavity is divided into three compartments—a central one, known as the epigastric region or the epigastrium, and two lateral regions designated from their positions as the right and left hypochondriac region, or hypochondrium.

The superior, lateral, posterior and, to a great extent, the anterior boundaries of the subphrenic cavity are furnished by the diaphragm proper. It should not, however, be forgotten that the superior boundary of the subphrenic cavity is unevenly concavo-convex. The convexity extending into the epigastric region from the position of the heart above the diaphragm and the concavities in both hypochondriac regions, and more so in the right than in the left on account of the liver being situated in the right dome of the subphrenic cavity, and unless some pathological condition changes the shape of the diaphragm it otherwise remains pretty constant. I base this statement upon the examination of a considerable number of cadavers and found it to apply so generally that I advance it here as a condition most frequently found after death and as, in all probability, giving a near approximation to the conditions present during life. It must, however, be admitted that in the female, as a result of tight lacing, the diaphragm is often changed in shape as well as in position; but this condition is associated with displacement of the organs below the diaphragm, particularly in its immediate neighborhood, and can not, therefore, be looked upon as normal. As to the viscera situated in the various artificially subdivided regions of the subphrenic cavity, the following are found: In the epigastrium almost the whole of the left

lobe of the liver, the quadrate, caudate and Spigelian lobes of the same organ, the left longitudinal half of the gall bladder, the pylorus with part of the stomach adjacent to it, the duodenum, except a part of its third portion, and middle two-fourths of the transverse colon, head and body of the pancreas, upper and inner parts of both kidneys together with their pelves and ureters, the upper and inner parts of both suprarenal bodies as well as the spleen. The right hypochondriac region contains the right lobe of the liver extending to the falciform or broad ligament, the right longitudinal half of the gall bladder, upper and outer parts of right kidney together with the same parts of the right suprarenal body and the hepatic flexure of the transverse colon. In the left hypochondrium are normally to be found the larger portion of the left lobe of the liver, the spleen, tail of pancreas, upper and outer parts of left kidney and its suprarenal body, fundus of the stomach and the splenic flexure of the colon, The peritoneum or tunica serosa is the serous membrane which lines the subphrenic as well as the whole abdominal cavity and invests most of the viscera to a greater or less degree. Its arrangement and relations to the contents is very complicated indeed.

Nevertheless, it will be necessary to give here a general account of the disposition of the membrane. Starting to trace the peritoneum in front, we find that it lines the internal surface of the anterior wall of the cavity, and is continued upwards to the under surface of the diaphragm, covering its greater portion. It is then reflected upwards on to the upper surface of the liver, over the stomach and the organs below, clothing them all, as it were. When traced laterally from the anterior wall, it will be found to line the sides of the cavity, and proceeding backwards also clothe the posterior wall of the cavity and the viscera lying upon it. Besides investing partially or completely all the organs in the subphrenic cavity, it becomes also reflected in certain situations from one organ to another, and from the organs to the walls of the cavity, thus forming processes which receive special names according to their location. And their function is to hold the viscera in position and to transmit vessels and nerves between their layers.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY.

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SEPTEMBER, 1907.

AN ILLINOIS BRANCH OF THE PUBLIC HEALTH DEFENSE LEAGUE.

We take pleasure in calling the attention of our members to what seems to us a movement which deserves the support not only of the medical profession, but of every right-thinking person in the state. The organization of this league is of recent occurrence and yet great progress has been made in increasing the sympathy and active cooperation of some of the best minds in the country. A national organization has been completed and a state league in New York, and it is hoped to have the state organization of Illinois in readiness for the election of the officers in October. The headquarters in Chicago will be thoroughly organized and equipped to carry on this vitally important work of assisting the constituted authorities in conserving the public health. Hitherto the medical profession, single handed and alone, has attempted to combat the many evils that are constantly attacking the health of the nation. This league will also endeavor to enlist the sympathy and active support of the laity, believing that the influence of an educated public opinion, fully alive to the dangers that beset the public health and organized to protect it, will be a valuable ally to the physicians along this line. By securing a large and powerful membership throughout the country, the league hopes to carry on an extensive educational propaganda and exert a tre-

mendous influence in all proposed legislation concerning public health matters.

The objects of this league, briefly outlined, are as follows:

1. To combat all forms of quackery and charlatanism.

2. To prevent food adulteration and drug substitution.

3. To prevent the sale of narcotics and alcohol disguised as patent medicine.

4. To prevent the circulation of indecent medical advertisements.

5. To advocate the establishment of a National Department of Health.

6. To carry on an educational campaign for the spreading of accurate knowledge concerning the public health and the inculcating of higher ideals.

7. To protect the public health by assisting the constituted authorities in the enforcement of existing laws and by urging the enactment of uniform legislation in all the states on matters relating thereto.

8. To cooperate with other societies interested in any public health problem and ultimately to effect a plan of union or cooperation of all organizations interested in the public health.

Representative physicians have already agreed to take an active part in directing the work of the Illinois branch, and it is to be hoped that every physician in Illinois recognizing the importance of the movement will feel it incumbent upon himself to lend the support of his membership to the league. Ladies representing the league expect to visit the cities of Illinois during September.

For any information address F. Elizabeth Crowell, Hull House, Chicago.

THE MUTUAL LIFE OF NEW YORK RAISES THE SCALE OF PRICES TO THE OLD STANDARD.

Undoubtedly as a result of the campaign made by the organized profession of the United States at least one old line company, which had announced a reduction in its compensation to examiners, has seen the error of its way and decided to return to the standard prevailing several years ago. This is announced to its examiners in a circular letter No. 88, which was mailed to the examiners of the Mutual Life Insurance Company of New York, July 23, 1907. Because of the importance of this concession to the demands of the organized profession we give place to the entire letter and congratulate both the company and the medical world on this advancement of fraternal comity. If anything were needed to show the value of organization this would be sufficient, and certainly it is one of the proofs that in union there is strength and without concertive action nothing can be accomplished. There are many members of the profession who thought that nothing would be conceded by the wealthy corporate life insurance companies, but they must be convinced of the power of organization by this letter.

The letter is as follows:

NEW YORK, July 23, 1907.

Circular No. 88.

Dear Doctor:—I am glad to announce to the Medical Examiner of the Company that on and after Aug. 1, 1907, the company will pay a fee of $5 for each completed examination for new insurance, irrespective of the amount of insurance applied for.

This has been rendered possible by rigid economy in other directions, whereby a saving in the expense of obtaining new business has been effected of sufficient size to warrant this step.

All extra allowances for mileage, obtaining additional information, urine, etc., will be abolished, beginning August 1. The fee for a microscopical examination of the urine will be $5, as heretofore, but this will only be made when directly called for by the company.

The fee for a certificate of health for the restoration of a lapsed policy will be $2 unless a full examination is called for, in which case it will be $5.

Very truly yours, BANDRETH SYMONDS, M.D., *Medical Director.*

PHYSICIAN A CANDIDATE FOR LIEUTENANT GOVERNOR.

Dr. George A. Zellar, of Peoria, announces that he is seriously considering making the race for Lieutenant Governor on the Republican ticket in 1908.

Among his qualifications, the doctor believes that during his incumbency as a superintendent of the Bartonville Asylum he has brought about many improvements which have attracted attention all over the United States, and in the more important office of Lieutenant Governor, should he be elected, he would be able to do them (the insane) much more good, as he would be the presiding officer of the Senate and a member of the State Cabinet. The Honorable Lawrence Y. Sherman, now occupying the office of Lieutenant Governor, would probably consider the incurable insane, whose management Dr. Zellar has had for the past four or five years, as easy as Sunday school scholars along about Christmas time compared with the management of the cliques and committees of the State Senate of Illinois.

Whether Dr. Zellar's studies in insanity have given him a key to unlock the political door of this state remains to be seen. He claims he has thrown away the keys at the Bartonville Asylum.

PAPERS READ AT THE STATE MEETING ON MEDICOLEGAL TOPICS.

In this issue of THE JOURNAL all papers read at the last meeting of the State Society on medicolegal topics will be found. As before mentioned in THE JOURNAL, the Medicolegal Committee was quite successful in securing interesting papers, and we believe that this is historically noteworthy as being the first effort in any state to bring this important matter to the front. The success of the Medicolegal Committee of the Chicago society along this line has been so great that it has attracted attention all over the country, and this success promises to be repeated in the larger field of the state of Illinois. Undoubtedly this matter

should gradually spread from state to state until finally a national committee upon this subject will have charge of the matter and very soon the blackmailing lawsuit against medical men will be heard of no longer. We hope that all our members will read the interesting series of papers in this issue of THE JOURNAL.

Correspondence

PUBLICATION OF MINUTES OF MEDICAL SOCIETIES' MEETINGS IN THE DAILY PRESS.

FAIRFIELD, ILL., July 26, 1907.

To the Editor:

In answer to a marked clipping from one of our county papers I will say that we are in the habit of giving our county papers a brief account of each meeting for the reason that several physicians in the county represent our society as a trust or combine. The publication of our transactions in the county papers effectively disposes of such contention and has a good effect on the people, who observe that our meetings are held solely for the good of the profession and the public. Respectfully, J. P. WALTERS, *Secretary.*

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The Adams County Medical Society held its regular monthly meeting, July 8, in the Elks' Club Rooms, Quincy, the society being called to order by the president. The doctors present were: Rice, Nickerson, Christie, Knox, Meyer, Spence, Grimes, Schullian, Mercer, Williams, W. W. and J. G., Brenner, Bates, Robbins, Ericson, Nichols and Wells. Dr. Robbins presented a case of fracture of the small portion of the femur in a lady 62 years of age, which was treated with almost perfect results by use of the plaster dressing. There was neither shortening of the leg nor eversion of the foot. This case and similar ones, under like treatment, were discussed by Drs. Christie and Montgomery. Dr. Montgomery presented a paper on Food Inspection as Applied to Milk and Meat, which was admirable and on account of its timeliness was ordered published in the city press. Dr. Nickerson presented a resolution and letter to the ordinance committee of the City Council urging immediate action by the presentation of an ordinance providing for the inspection of milk and meats in our city. Luncheon was enjoyed by the members at Hotel Newcomb.

August Meeting.

The August, or "Mark Twain" meeting of the Adams County Medical Society took the form of an excursion and a joint meeting with the Hannibal and Marion County, Missouri, Societies. A steamboat was secured by members of the society and the expenses incident to the meeting were thus provided by the money which they subscribed. Invitations were sent to the leading practitioners of Pike County, Illinois, Marion and Ralls counties, Missouri, and also to the leading men in this part of Illinois and the territory adjacent to Hannibal.

Physicians and their wives, and nurses to the number of one hundred, left the wharf at Quincy on the steamer "Uncle Sam" at 11:30 August 12, on one of the most delightful and most pleasant days the month of August ever gives. The regular routine business meeting of the society was held while steaming down the river. Hannibal was reached at 1 o'clock and the company marched to the "Mark Twain" Hotel, where luncheon was served to them and to about seventy-five physicians and their wives from Hannibal and Eastern Missouri. After the luncheon came a most excellent scientific program, and then the combined company boarded the boat and went down the river for a visit to the famous "Mark Twain" cave, known in legend and story to folk the country over. The return trip to Quincy was even more enjoyable, the delicious coolness, the glorious colorings of the western sky as the sun sank below the horizon, the fleeting, shimmering shadows on wave and shore, spoke to and touched the deeper hearts of the company with an exquisite comfort and peace.

This "Mark Twain" meeting was the most successful and enjoyable ever held. Everyone was delighted and the spirit of comradeship and comity, most desirable among all men, but especially between those in the noble profession of medicine, was genuine and pronounced. The thanks of the Adams County Medical Society are hereby extended to all, especially to the profession and their wives of Hannibal, for their efforts in making our excursion and meeting such a great success.

There were present on this occasion physicians and their wives from Hannibal, Rensellaer, Withers Mills, Ilasco, New London, Monroe City, Louisiana, in the State of Missouri; from Keokuk, Iowa; from Jacksonville, Mt. Ster-

ling, Clayton, Golden, Camp Point, Loraine, Barry, Pittsfield, Griggsville, New Canton, Kingston, Marcelline, Mt. Carmel, Burton Coatsburg and Quincy, in the State of Illinois. Letters of regret were read from Mark Twain, Doctors Percy, Black, Bacon, Kreider and others.

Dr. Alfred C. Croftan, Chicago, read a paper on The Practical Management of Diabetic Cases. In response to an invitation to present some subject pertaining to the domain of internal medicine, he selected a chapter from the metabolic disorders for several reasons. In the first place, because disorders of metabolism are most remote from surgery and hence especially vindicate their claims to be a part of internal medicine; and second, because metabolic disorders offer the best illustration of what can be accomplished when the laboratory is brought to the bedside; third, because metabolic disorders when properly studied offer the most grateful opportunity for exact therapeutics. In view of the fact that the present audience is one of practicing physicians, the chief consideration will be laid upon that aspect of the large study that concerns itself with practical therapeutics, especially as within the narrow time limits properly set for the reading of a paper of this kind, only a small portion of the vast material can be properly discussed. By way of introduction and in order to illustrate the beautiful accuracy that can be followed in studying a case of diabetes, Dr. Croftan explained the conception of caloric values and the methods of calorimetric determinations in relation to the metabolism of diabetic subjects. After showing how a diabetic subject, notwithstanding that it may ingest more than the calculated caloric requirement in 24 hours, may, nevertheless, emaciate and consume its own tissues, owing to the lack of many calories in the urinary sugar. After showing how it can be calculated what proportion of the consumed tissues of the patient is furnished by fats and which by albumins, the essayist went on to say that the question of feeding a diabetic would be a very simple one on the basis of such a calculation, if it were true that no diabetic could tolerate any carbohydrate food. As a matter of fact, only a small minority of cases of diabetes are unable to utilize any of the carbohydrates of the food. Most of them, in fact, not only can tolerate these carbohydrates, but fare infinitely better if they are supplied. It is a matter of the greatest importance, of course, to determine how much carbohydrate pabulum can be ingested with safety and to remain strictly within these limits. This determination is performed by estimating what is called the boundary of tolerance or the boundary of assimilation. The technic of such a determination was then described at some length and the differentiation of diabetes into several clinical types attempted on the basis of tolerance determinations. The routine feeding of diabetics by the withdrawal of carbohydrate food for indefinite periods of time was then condemned chiefly on the following grounds: (1) Because it is unnecessarily severe and very difficult to carry out in practice, inasmuch as most patients will rebel against so orthodox a régime. (2) Because it is unscientific for the reason that it fails in the foremost essential of any method of feeding, namely, to maintain adequate nutrition and to supply sufficient caloric values. (3) Because it is inartistic and inelegant and violates all the tenets of the art of dietetics, inasmuch as it forces the greatest monotony in feeding and deprives the patient of the psychic stimulus of appetite and enjoyment of food that is so essential for proper assimilation. (4) Because it is often directly dangerous on account of the danger of acidosis that it engenders. Dr. Croftan called attention to the occurrence of acetonuria and general acidosis in normal subjects who are placed upon a carbohydrate-free diet for any length of time, and showed how the supply of even small quantities of carbohydrate food in most cases promptly did away with the acetone excretion. This led to a further discussion of the danger of too much albuminous pabulum, for, as the essayist showed, too much meat not only favors acidosis for various chemical reasons, but also reduces the tolerance for carbohydrates, albu-

mins; in fact, constituting in themselves very prolific sources of urinary sugar in diabetic subjects. Finally, the use and abuse of diabetic breads, the technic and the indications for the so-called "Oatmeal Cure," and the employment, indications and counterindications for various drugs, chief among the latter arsenic, iodid of potash, opiates, salycilates, alkalies, and organ preparations, were discussed. In conclusion, Dr. Croftan briefly recapitulated and summarized everything that had been said and ventured the statement that more cases of diabetes died from starvation on account of the injudicious dieting than from the disease proper.

Dr. Frank Parsons Norbury, alienist and neurologist, of Jacksonville, presented a paper on The Indications for, and the Technique of the Rest Treatment, and illustrated and emphasized his points by a number of case reports, the charts accompanying which contained data as to sleep, weight, and mental symptoms arranged in an original manner following the usual way of recording the temperature curve. Dr. Norbury is a frequent visitor to the Adams County Society and his address was much enjoyed.

The paper by Dr. Ernest Zimmermann, Quincy, on Perityphlitis Simulating Appendicecal Abscess and Ileocecal Tuberculosis, illustrated by an operative case in his clinic, was postponed on account of time until the next meeting. This was an unique case and was successfully treated in a surgical way.

C. A. WELLS, Secretary.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, May 15, 1907.

Regular meeting was held May 15, 1907, with the President, Dr. Geo. W. Webster, in the Chair. Dr. Geo. Thos. Palmer read a paper on Hospital Abuses and the Remedy. Dr. C. S. Bacon discussed The Relation of Medical Charities in the Teaching of Clinical Obstetrics. Dr. T. J. Renn read a paper on The Dispensary Abuse. The discussion on these papers was opened by Dr. C. O. Young, and continued by Drs. Denslow Lewis, E. H. Ochsner, E. H. Lackner, J. M. Dodson, Mr. McCormack, Drs. E. A. Fischkin, E. Kenyon, and closed by the essayists.

DISCUSSION ON THE PAPERS OF DRS. PALMER, BACON AND RENN.

Dr. C. O. Young:—I served on the staff of one of our largest denominational institutions for several years without receiving any remuneration. I once tried to collect a fee of $10.00 from a well-to-do merchant coming from a Western city, and he got his pastor to write a letter to the president of the institution, a divine, and he conferred with me and then informed the pastor that his parishioner did not have to pay the bill. I was repeatedly prevented by the directors of the institution from collecting surgical fees from private patients whom I placed in the hospital. You may ask why I continued to serve on the staff. My answer would be the same as Jacob's when he served Laban seven years for nothing in order to get Rachel. I hoped to get my Rachel—by promotion; but after the seven years had elapsed I did not get Rachel. Another member of the staff got her.

I moved south and was instrumental in starting a hospital on the south side. Let me tell you how we carry on the charity work there. At the Washington Park Hospital, a quasi-public hospital, the charity work is done by an entirely separate organization; in fact, two Ladies' Aid Societies. When a charity patient applies for admission to the hospital he is referred to one of these organizations, whose committees make a personal investigation, and if the patient is worthy the staff is supposed to render service free of charge. The aid societies are working purely for charity and not for gain. A case came up to-day where a family in South Chicago wanted to bring a tubercular hip case into the hospital. They were referred to the charity organizations, who found that the family

owned a house that was said to have a big mortgage on it, but the people refused an investigation. If some such organization that has no special interest in the hospital would be willing to do the charity work much good could be done.

Dr. Denslow Lewis:—Medical practitioners are primarily professional men and not business men, but they must make a livelihood and most of them must live on what they earn in their profession. Of course, we do not believe in trades unions, but we must live. I do not pretend to answer the problem that has been advanced, but I will make a statement regarding actual conditions as I have seen them in Chicago and as I have known them in my own experience. Twenty-one years ago, when it became possible for me to be connected with the County Hospital, I served gladly and I continued in that service for sixteen years, devoting myself faithfully to the work, operating on an average three times a week and holding one clinic a week. During that time I often drove ten miles, at inopportune times, sometimes in the night, to attend a pauper. I received absolutely no compensation for that work, and yet I am free to say that I did not do it for nothing. I did it for an object. The object was that I should become known to some extent as a surgeon. That object was accomplished, and I felt I was amply repaid for my sixteen years of service. So, with Dr. Bacon, I am free to say that if he had not had those pauper cases he would not now be known as an authority on obstetrics. It may therefore be said that when we go on the staff of a charity hospital we receive pay, not in money, but in its equivalent.

If, however, by rendering such free service we interfere with the livelihood of our professional brethren we are doing harm; for that reason, I think, the statements made regarding the desirability of an investigation are well advised. Every person who can pay should be made to pay at least something, but there are many cases that are deserving of free treatment, special treatment that can not be given by the ordinary country practitioner, and such cases should be sent to the County Hospital, or other charity hospitals, and receive the benefit of consultation with men who, through their experience, have been able to become specialists in certain lines of work. When I found, as I reported to the State Medical Society some years ago,[1] that a man became blind in the DeWitt County Jail because no one would treat him, and that another man, in the Williams county almshouse, had a fracture of the leg for six or eight months because no one would set it without pay, it shows the advisability of bringing such individuals to cities like Chicago, where hospitals, like the County Hospital, will be glad to receive them and take care of them. As you know, there has been of late years a lack of clinical material, and it is impossible to hold clinics unless there is material. Therefore, hospitals gladly welcome operative cases; by judicious investigation I believe we can bring to charitable institutions an increased supply of proper material which may well serve for clinical instruction.

As regards obstetric cases, it is of the highest importance that every student should have at least six or seven cases of his own, because when he enters practice, he will have obstetric cases very early in his career. If this be done in three weeks, well and good, but the element of time is unimportant. The plan I outlined for the late Dr. Etheridge some years ago proposed numerous substations where students could live from four to six weeks and attend the obstetric cases that came to them. Of course, they were to work under the guidance of an instructor, whom they were to call in for assistance whenever there was an interference with the labor. This instructor in turn was to send the patient to the hospital in case some capital operation was needed. In that way it was proposed to establish a system which would provide experience and instruction for the students and subserve the welfare of the patient and the community at large. I am delighted to hear from Dr. Bacon that some such system now exists, because it is a matter of paramount importance to the student and to humanity.

Dr. E. H. Ochsner:—I think we all agree that the chief offenders are the people in charge of hospitals, be they trustees, superintendents or Sisters Su-

1. Lewis (Denslow): The Management of our Charity Hospitals, ILL. MED. JOUR., March, 1903.

perior. But who taught them their tricks? I will tell you, gentlemen, that the doctors taught them the bad tricks, and the only fault we can find with them now is that they were mighty good pupils. Not only the city doctors taught them bad tricks, but the country doctors as well. I could tell you of more than one case where a country physician had arranged to do an operation, and the patient, to make sure that an operation was needed, went to another physician, an enemy of the first physician, who told the patient to come with him to Chicago and he would see that the operation was done free of charge. Who is to blame in this case? The country competitor or the city specialist? I have had the same thing happen to me. A country doctor brought a man to me, stating that he was too poor to pay a fee. Would I operate for nothing? Yes, certainly. In a week the doctor's competitor wrote me the exact conditions, showing that the patient was well able to pay. Who is to blame? I or the doctor in the country, who brought the patient?

I know of an instance where a doctor went to the hospital authorities and asked why they allowed a certain doctor on the staff to charge so many fees. He volunteered to do the work for nothing if he were placed on the staff. Is it any wonder that the hospital authorities sometimes follow such advice when they are urged by the doctors to do it?

Teaching material should be drawn entirely from the pauper classes when no fee is charged by the clinician. Many people come to the clinics and think that because they are willing to serve as teaching material they do not need to pay. They have been taught that trick by physicians. When I was a student I often heard professors tell such people that it was not necessary for them to pay anything because they were offering themselves to the good of humanity. Is it any wonder that the public is now regularly expecting this?

Dr. Bacon brought out the question of modesty in the teaching of clinical obstetrics. Superficially it would seem that that would not have much bearing on the question under discussion, but on deeper investigation it is found to have great bearing, and here, again, physicians are to blame. I know of a charity obstetric institution in this city where there is on an average one birth a day. It is controlled by lady managers, who object very strongly to allowing the material to be used for teaching purposes. They hold up their hands in holy horror, in spite of the fact that the majority of the patients in this hospital are fallen women who happened to have become pregnant. And yet they are in a measure justified in their position, because they have heard of abuses in some of our hospitals that are outrageous. A single abuse will do more harm than a thousand proper acts can neutralize. For instance, in Vienna I saw a respectable young woman brought into the clinic stark naked and exhibited to 200 medical students. There was absolutely no occasion for this. One such demonstration in Chicago would put back our teaching facilities indefinitely.

A case in point: In Chicago about eight years ago the Cook County Hospital authorities allowed bedside instruction for about six months. They suppressed it for a good and sufficient reason. A very prominent clinician had the pernicious habit of walking into a ward where there were seventy-two female patients, and without having a screen put around the bed first, he would draw down the bed clothes, completely exposing the patient. That man meant no harm, but he did a lot of harm. Is it any wonder, then, that the Cook County Hospital authorities would not continue to allow bedside teaching?

Dr. E. H. Lackner:—I have been connected with the Michael Reese Hospital for many years. We have a large dispensary and treat many patients every day. We have in attendance usually some experienced person who has charge of the waiting room. In the course of time this attendant becomes acquainted with the patients, because, as a rule, such patients come regularly. If the people are not known, their names are taken and an investigation is made. The first treatment generally is given free, but before subsequent treatments are given the standing of the patient is ascertained, and if he can pay, he is excluded from the clinic, and is sent to a physician. The charity in the dispensary is based on a

strictly business basis. The patients are referred to some headquarters, and if they are poor, they receive all they need, even if they have to have some attendance at home. If any one of the family is sick, the case is investigated and the patient is sent to a hospital. If it is a dispensary case, it is taken care of in the dispensary. The medicines are supplied at a small rate. A lay board controls the charities. Of course, once in a while we are taken in, but if all dispensaries were conducted on that same basis, pay patients could in great measure be excluded. The work is done through a bureau of charities, with the assistance of the medical profession.

Dr. John M. Dodson:—As a member of the committee of which Dr. Renn is chairman, I have been very much interested in this question. While the information gathered will be of great value, it is only the beginning of a movement which must continue for a long time if we wish to do away with some of the abuses in Chicago hospitals and dispensaries.

I wish to endorse what Dr. Ochsner said. The medical profession is responsible for these abuses in almost every instance. The zeal for clinical material, the zeal of the young man to advertise himself has resulted in producing the conditions referred to. Although in such practices there is a temporary gain for a few, the profession as a whole suffers in consequence. We shall reach in this city the condition that has been reached in New York, unless we find some way to forestall it, of having a state commission to regulate the whole business by law and prevent the establishment of dispensaries where they are not needed, and regulate them very carefully where they are needed. That law, I understand, has not been entirely satisfactory, but it has done much to correct the abuses. I believe that the clinical material is ample, but we have made a mistake in putting the needs of the medical student ahead of this great question of charity. The foremost question to be asked when people apply for medical charity is, Are they deserving of it? We have no right to pauperize a community even for so great and worthy an object as the education of medical students. Moreover, I am of the opinion that the clinical material will be greater in amount when this business is properly regulated than when patients are taken indiscriminately, for the deserving poor will not associate with imposters. My experience in the dispensary with which I have to do will bear that out. The attendance has increased since we have made an effort to investigate cases and to exclude the unworthy.

I can not quite agree with Dr. Ochsner that only the pauper patients should be used for clinical purposes. I believe that many pay patients are perfectly willing to let themselves be used for clinical purposes. All persons should be so used only with the understanding that their presentation in this way is not in payment for services, but that it is a contribution to the great cause of educating medical students and advancing medical science. Dr. Ochsner has alluded to the shameful abuses which have been practiced, in the name of medical education, in some of the clinics, many of them being decidedly improper. Patients are sometimes treated not as human beings, but as cases. I have known teachers to exult over the accomplishment of the delivery of a woman in the amphitheater before hundreds of students. No one who has any conception of medical education could regard such a demonstration as other than an absurd, ridiculous and utterly unjustifiable procedure. The improper and unnecessary exposure of patients brings the whole business of clinical teaching into disrepute, and makes it difficult for us to get the right and proper use of clinical material.

Two classes of dispensaries exist here: those that are being used presumptively in the right way by medical colleges for teaching purposes, and those that are of the mercenary sort. My own feeling is that we had better let the latter class alone, and clean our own skirts first. I believe that this can be accomplished without legislation, by the appointment of a permanent commission on medical dispensaries by this society. We should invite the cooperation of all the dispensaries in the city and agree on a method of procedure and investigation, which might be conducted by the Bureau of Charities, because we must have one central

bureau. Each dispensary should agree to submit to a proper investigation at reasonable intervals by representatives of this commission. If the representatives of the better dispensaries would get together, a solution of this problem would be found, for we have not yet reached the serious conditions that have been reached in New York and some other large cities.

Mr. McCormick (by invitation):—Dr. Renn stated that 20,000 rations, at a cost of $2 a piece, had been issued from the county agent's office, but only after careful investigation, while a large number of calls for medical service were responded to without any investigation. I want to say in justice to the county service that it is about as good as any county service in the United States. There are sixteen doctors on the staff, and the calls as they come in are indexed and filed away. When a call comes in for a doctor, the clerk refers to the index, and can tell in a moment whether that particular person has had a doctor before, at what times, and for what purpose. He refers the patient to the doctor, and it is up to the doctor, who sees the case, to say whether the patient is justified in receiving charity service from the county. If the patient is receiving charity services, but can afford to pay, it is the fault of the doctor, not of the county.

I would say, from what I know of medical service, and my knowledge of different dispensaries and hospitals in Chicago, that the medical profession itself is to blame more than any one else for this particular abuse. When I heard that 28,000 patients were treated in a dispensary in one year I was surprised, because in the county agent's office the total number treated in four years was much less than that, and all the people in Chicago feel that they have the right to apply for that relief which comes from the public and is not charity. I have always insisted that it should not be called charity, but relief. Twenty-eight thousand patients in one year as against 7,000 in four years is what I call doing a land office business. An investigation seems very necessary. In the rush to obtain patients and advertising, there is too much of this charity work done for people who can pay for it.

In regard to the County Hospital, I do not suppose that Dr. Lewis, in all the time that he served on the staff of that hospital, ever inquired whether a patient could afford to pay for the services. It is a fact that to-day there is practically no investigation made in the County Hospital. Of the 24,000 cases admitted each year, about two-thirds are not investigated. For instance, a man is knocked down in the street and is taken to the County Hospital. His clothers are searched and several hundred dollars are found in his pockets. He is given good treatment, as good as in any hospital, he stays for six weeks, and when he is discharged his money is handed back to him, and he walks out as well off, in fact, better, than when he came in. Is that fair to the taxpayers of Chicago? This society ought to take some action to force these institutions to work for charity patients only and not for everybody who comes in.

Dr. Denslow Lewis:—I am perfectly free to admit that during the sixteen years of my service on the staff of the Cook County Hospital I not only did not investigate the financial condition of patients, but I knew that in many instances some of the patients were friends and relatives of county commissioners and other county officers, and for that reason I was expected to operate on them for nothing, which I did very gladly.

Dr. A. E. Fischkin:—I believe we all agree with Dr. Palmer that the hospital abuses do more harm to the profession than the dispensary abuses. The cause of these abuses was mentioned by many speakers. I believe the profession could help if they would individually and collectively demand of hospital surgeons and clinicians that they pay more attention to the condition of applicants for relief. Dr. Palmer pointed out the abuses in Chicago. I believe that everybody connected with a hospital can point to certain abuses. So many operations are being done for nothing. I was told by a prominent surgeon of a man who came for an operation, for which he would charge $200. The man did not return, but some

time afterward his brother told the doctor that another more prominent surgeon did the operation for nothing.

Dr. Lewis said that these free services at the hospital are paid for. They are not. If it is pay, the profession ought to blush for it, because we are practicing on the living and are using them to make a reputation for ourselves. How do the great men develop in Europe. They do not start in as head surgeons. They serve as apprentices first, as assistants, etc., before they are appointed as independent surgeons, but when they are appointed they receive a good salary. That is the way to study surgery, and that is the way to appoint surgeons. I believe that if this difference would be brought to the attention of the public, it would rather prefer to pay its hospital staff in salaries than in practice. Dr. Lewis says it pays because it gives us prominence. Why does the medical profession clamor to get prominence in this way when no other profession will do it? No minister in Chicago will preach seven years for the sake of training his tongue and becoming prominent and not get paid for doing it. The same is true of the architect, the lawyer and other professional men. They all get paid for their work, though in the meantime they are becoming proficient. Physicians are the only ones who work for nothing. They undergo all kinds of abuses in the shape of examinations, etc., just to have the privilege of working for nothing.

Another point which was brought out this evening is the material of maternity dispensaries. If the principle is correct that it is immoral to receive medical charity for a patient who is able to pay, then the woman who exposes herself in a maternity or a gynecological clinic is doubly repulsive, for she suppresses not only the moral sensibility, but also the feeling of dignity and of modesty inherent in every woman. I believe in Dr. Dodson's statement that every patient could be made to serve the purpose of teaching if he be shown its higher humane and divine motive; but so long as we claim the poor only as teaching material on the argument that this is their only way of paying for our charity, every woman who, being able to pay the doctor's fee, evades it by becoming clinical material is doubly repulsive, and in maternity as well as in any other service such abuse ought to be remedied.

Dr. Elmer L. Kenyon:—It seems to me that until physicians realize clearly that free treatment abuses result from their own efforts at self-exploitation, we are not likely to get far toward a solution of the problem. The position of the medical profession is a peculiar one, different from that appertaining to any other occupation. The physician is forbidden by his own rules to advertise in the usual ways, and the result is that he is continually seeking methods of advertising that are not unethical. This state of affairs gives to such a means of self-exploitation as free treatment service an exaggerated importance. Dr. Dodson has suggested that our study of this question has scarcely advanced beyond superficialities, and yet a suggestion for a remedy has been made here to-night that is not superficial. It was made by Dr. Palmer. His suggestion was, I believe, to the effect that certain instances of free treatment abuse might be met by declaring the culpable physician unethical. My own plan is almost universally comprehensive, but involves the same principle. It is, briefly, this: No patient whatsoever shall be treated free in any institution until he has first undergone an investigation for his economic fitness for free service; and any physician who treats free an institutional patient that has not received the approval for free treatment service of an authorized investigating body, shall be held unethical. There must underly the plan an authorized method of investigation, approved, but not carried on, by the medical profession. With such a universal method of investigation it is possible to rightly regulate medical charity. With the ethical whip held over physicians it is possible to make the plan practically universal. Herein lies the rational solution of the free treatment problem.

Dr. Palmer (closing the discussion on his part):—In my paper I merely hinted, and with some diffidence, that the doctor might be responsible for these evils, but you have removed any doubt that there may have been in my mind in

the matter. I will say that I heartily agree with you that the doctors are wholly responsible for the continuation of these evils. It has been suggested that the doctor is moved to render free service indiscriminately for the purpose of self-interest and self-advancement. If these evils are what we claim them to be, and if the clinicians, however prominent and distinguished they may be, are encouraging the evils for the purpose of personal gain, they are taking a position which is directly injurious to the profession as a whole, and our remedy lies in declaring these men to be unethical and in so treating them.

I fear that Dr. Ochsner thinks that I am holding up the virtue of the country physician in contrast with the iniquity of the city man. In this he is mistaken. I will say, however, that if Dr. Ochsner has only operated without charge upon the country patients vouched for by their home physician, he is an exception among the surgeons connected with the Chicago hospitals.

The discussion to-night indicates clearly that we have come to a place where action ought to be taken. Such action ought to be positive and definite. Our course seems to be clear.

Dr. Bacon (closing the discussion on his part):—I did not dwell especially on the importance of the investigation of our charity cases; but I believe in it. So far as obstetric cases are concerned, they can be investigated because most of the patients apply for service early, when there is plenty of time to investigate. I believe that all cases applying for help should be investigated by an impartial committee, not of ourselves, but of an independent organization, such as the Bureau of Charities. I did mean to emphasize that all cases that receive medical help should serve as clinical cases. I hold that obstetric cases are in exactly the same position as others, and that the management of these cases can be so conducted that there is no offense given to the modesty of the patient. The examples of abuses that were mentioned do not militate against that position. Some objection seems to have been raised to the use of obstetric cases as clinical material. I do not know how any one can practice obstetrics without clinical experience. There is need for thorough instruction in obstetrics more than in surgery. Skill in obstetrics is difficult to acquire, and because of the lack of clinical material, obstetric practice is much lower than other kinds of practice.

Dr. Renn (closing the discussion):—I do not think there can be any dispute between Mr. McCormick and myself. His remarks prove the truth of my statement. Calls are sent into the county agent's office over the phone, the files are looked up, and whether the applicant's name appears or not the physician is sent to make the call. Mr. McCormick says it is then up to him (the physician) to make the investigation, which proves that there is a departure from the system applied when no one asks for other forms of relief. The rule of the county agent's office is that no fee greater than $1.50 shall be paid the physician, and that such a fee shall only be paid when medicine is dispensed. Now, these physicians accept these positions to make all the calls they can, besides they are physicians, and I do not blame them for refusing to act as investigators for the Cook County agent. The annual report of the Cook County Commissioners for 1905 states that over 18,000 outdoor patients were treated. The small number treated at the dispensary is accounted for by the fact that it is situated on Clinton Street in the heart of the large manufacturing district, where the employés are earning good wages and can afford to employ a physician. Another reason is that no one would look for a dispensary in that district, and even though they knew there was one there it would be difficult to find it. Dr. Bacon's position is well taken. There must be a sufficient amount of material for clinical instruction of obstetrics. There should also be greater cooperation between the profession and the medical colleges and there would be if the physicians at large did not feel that in these matters they were being treated unfairly. The records show that one maternity attended 1,300 cases, 200 each in two other maternal dispensaries, making 1,700 in these three maternities that we know of. Physicians feel that many of these people are being pauperized. Every general

practitioner in the city will tell you that he delivers from one to three women every year from whom he never expects to receive a cent; legitimate cases for charitable benevolence that could be turned over to these institutions, relieving us of the responsibility, wear and tear, and assuring them of skillful, scientific treatment, besides promoting the art of midwifery. When the teaching institutions stop the abuse of medical charity they will receive this benefit, the sick poor will receive the prompt, efficient treatment they deserve, and the general practioner will receive his reward also.

Regular Meeting, May 29, 1907.

A regular meeting was held May 29, 1907, with the President, Dr. George W. Webster, in the Chair. Dr. William Allen Pusey read a paper entitled The Use of Carbon Dioxid Snow in the Treatment of Nevi and Other Cutaneous Affections. The paper was discussed by Dr. Frank Hugh Montgomery, and in closing by Dr. Pusey. Dr. Thomas J. Watkins read a paper entitled Care of Suppurative Wounds Following Abdominal Section. The paper was discussed by Drs. Albert Goldspohn, Carl Wagner, and the discussion closed by Dr. Watkins. Dr. Henry W. Cheney read a paper on The Serum Disease.

DISCUSSION ON PAPER OF DR. PUSEY.

Dr. Frank Hugh Montgomery:—I wish to say personally I am much obliged to Dr. Pusey for presenting this paper and for showing these patients. My interest centers chiefly, if not solely, in the treatment of pigmented nevi. For the vascular nevi and for the other cutaneous disorders for which Dr. Pusey has tried the carbon-dioxid, I think we have other established methods that give equally good results. For the extensive pigmented nevi, however, we have as yet no entirely satisfactory method of treatment. Excision of small areas, and excision followed by skin grafting in the more extensive cases, has, up to the present, given the best results. These are not entirely satisfactory, however, and we shall welcome any new method that will remove these blemishes and leave less scarring than is produced by excision and grafting. The freezing treatment with liquid air or with carbon-dioxid, as described by Dr. Pusey, seems to promise more than any other method with which I am acquainted. The results in the cases shown by Dr. Pusey are certainly good. The scarring is less than that which usually follows plastic operation.

It is manifestly impossible to remove these pigmented nevi without the production of some scarring, as the pigment lies too deep in the cutis. We are, however, looking for a method that will leave the smallest possible amount of scarring. Dr. Pusey emphasizes the fact that in the freezing treatment there is left the minimum amount of scarring. I do not believe he wished to convey the impression, however, that by this method deep and very disfiguring scars can not be produced. I was present at the demonstration in New York by Dr. Dade, mentioned by Dr. Pusey, and it was but a month or two later that I saw a case that had been treated with liquid air, in which the resulting scars were as deep and disfiguring as those of a severe burn. It is important, therefore, that the freezing process be not carried too far. As Dr. Pusey states, liquid air is not available for practical use, and we are consequently indebted to him for the substitution of carbon-dioxid, which is easily obtained and controlled.

Dr. Pusey (closing the discussion):—I quite agree with Dr. Montgomery that the interesting things pertaining to the therapeutic use of CO_2 are the results in pigmented nevi. The results which I have shown to-night, I believe, are better than can be gotten by any of the ordinary procedures, and I believe the agent offers prospects of benefit in pigmented nevi that can not be obtained in any other way. I believe it is also likely to be a very useful method in the treatment of vascular nevi, at least the flat lesions. One very important feature of it is that the treatments are not very disagreeable; they can be carried out in children without eliciting any complaints, rarely causing a 6-year-old child to cry.

I am glad Dr. Montgomery mentioned the matter of scarring from liquid air. When I saw the demonstration of liquid air, I got the impression that it was

almost impossible to produce scarring; I soon discovered from my own experience that scarring was very easily produced, either with liquid air or carbon-dioxid. However, by timing your applications carefully and following the technic which I have indicated, the effects can be exactly controlled.

DISCUSSION ON THE PAPER OF DR. WATKINS.

Dr. Albert Goldspohn:—The subject which Dr. Watkins discusses deserves attention, although it is hard to bring forth any new thing. I am glad he emphasized the point of not being too meddlesome in the care of these occasional occurrences of suppuration of the abdominal incision. I take it that he refers to wounds in the abdominal wall only, not the deeper sinuses in the abdominal cavity.

Dr. Watkins:—I had reference to all suppurations in the abdomen that appeared in the wound.

Dr. Goldspohn (resuming):—It is harmful to use strong antiseptics, but we can use some things that have some germicidal value, and yet are not markedly destructive to tissue or to granulations.

I would take exception, however, to the statement he makes of being averse to keeping the outer openings of sinuses and wounds open. In these old sinuses or suppurating wounds, the skin granulates much faster than does the rest of the sinus, and the aperture through the skin begins to close at too early a date. It requires some method to preserve the external aperture sufficiently to maintain drainage, and anything that interferes with drainage is wrong. There can not be any discussion on that score. That is as simple as A, B, C. We are dealing with cavities or wounds that heal by granulation, and the wound secretion must be removed if these granulations shall prosper. There should be no hindrance to drainage which must be accomplished up-hill. Therefore, something more is necessary to maintain the external opening or that part of the sinus which goes through the abdominal wall, and is subject to the contracting influence of the recti muscles. This should be kept open.

As to the removal of the sutures that have to do with the skin, it is the proper thing to do, but not the removal of sutures in the deeper parts, as, for instance, in the muscle, because the muscle has too much to do with the solidity of the whole result, and guards against the prevention of ventral hernia. But the skin has no function, and any defect in it we can easily close afterward, when the deeper parts of the wound are solid.

Another thing with reference to drainage and irrigation is that it is very unwise to use large quantities of water or strong antiseptics; but if we have a sinus that undermines the skin, as sometimes occurs outside, we can expedite the obliteration of such an undermined cavity by making a counter-opening somewhere, so that we can run a current of water through it. There is a decided gain in every such case by having an opportunity to do that. The liquids which I regard as most advantageous are sterile water for irrigations, chiefly for the mechanical effect of the current of water to remove the effete substances which do not irritate the granulation tissue. For the care of the external part of the wound, particularly the skin, there is nothing as good as alcohol. Carbolic acid, lysol, bichlorid of mercury, etc., are not indicated. Occasionally, when these sinuses have become old and thoroughly walled off from the peritoneal cavity, they are much benefited occasionally if they do not progress, by being filled up with tinct. iodin and washed out again. When I say occasionally, I mean once a week or once in two weeks. As to the removal of the sutures from the skin, it facilitates drainage, and if the skin does not unite it is easy afterward to freshen the wound and put in sutures and you get a more solid result than you would from mere granulation.

Dr. Carl Wagner:—I am very sorry that I did not hear all of Dr. Watkins' paper. I was very much interested, however, in the part of it that I did hear. I would like to comment on one important remark made, namely, that where we use a compress on a suppurating wound it should be changed often.

Last summer I had an opportunity to discuss before the North Side Medical Society the after-treatment of hernia, and the question came up about stitch

abscesses. At that time I remarked that for the last few years I had succeeded by a simple method in avoiding them, especially when they most frequently occurred during the hot summer days, on account of patients perspiring freely. Undoubtedly, it is the perspiration, which is filled with microbes, that enters the field of operation and brings about stitch abscesses, and subsequently infection of the catgut in the deeper layers. In the hottest summer time I change the dressings three or four times daily, in many cases attending to this myself, and found that since that time there have been no complications.

Speaking of irrigation, I agree with Dr. Watkins that nothing but salt solution should be used. In my cases I have had success of late by not using the ordinary tube in the wound, but using a thin catheter and going in as far as the sinus reaches and through that remove the collection of pus or débris from the bottom of the wound without using a special drain.

In regard to drainage, I believe the rubber tube, if it is inserted for one thing or another, should be removed the second day. I use a rubber tube very rarely, and then only at the muscle layer, which Dr. Goldspohn mentioned as being very important, on account of its early closure, and leaving a pocket below.

In regard to closing suppurating wounds, I use, instead of silk or silkworm gut, silver wire, the silver wire being passed from one side to the other, and not going over the top of the wound ledge. The silver wire is fastened at the end to a leaden bullet passed through a leaden plate, then through the two wound edges again through a plate and fastened again by a bullet, riveting the wound, bringing about hemostasis if there was a little oozing from underneath. I have a case at the hospital at present in which there was suppuration of large glands in the inguinal region. In this case I closed the incision with two silver wire sutures. I made a long incision, but only needed two silver wire sutures to close it. I do not think I could have done this with less than seven other sutures. These two sutures brought the wound together very nicely. I removed the drain from the suppurating area on the second day, and at the end of five days there was no reaction.

Dr. Watkins (closing the discussion):—I stated in my paper what Dr. Goldspohn has said, namely, that there was nothing especially new in what I said. In the discussion, however, I feel that we are still in need of more missionaries to do away with a lot of meddlesome treatment of infected wounds. If these gentlemen will simply have the courage to treat these cases without drainage, without removal of stitches, without opening up the wound and without the use of antiseptics and packing, they will all be very much surprised to find that their cases do not need these things. The more we handle these wounds, the greater the danger of infection. Dr. Wagner is mistaken in saying that I irrigate with normal salt solution. I do not irrigate these wounds at all. I believe that irrigation is harmful, useless, meddlesome and dangerous. The doctor spoke of uphill drainage as one of the reasons for keeping the wound open at the top. If one keeps on wet applications as long as the wound looks angry, he need have no fear of its draining.

In regard to stitch abscesses, we have very little trouble with those now, because, as a rule, we have no stitches through the skin, except a twelfth or sixteenth of an inch from the edge.

Regular Meeting, June 11, 1907.

A regular meeting was held June 11, 1907, with the president, Dr. George W. Webster, in the chair. Dr. Edward H. Ochsner read a paper entitled The Etiology, Symptomatology and Non-Operative Treatment of Potential and Acquired Static Flat-Foot. This paper was discussed by Drs. E. W. Ryerson, John L. Porter, and the discussion closed by the essayist. Dr. Alex. Hugh Ferguson made some remarks on Excision of the Knee-Joint. His remarks were discussed by Drs. Norman Kerr, Carl Beck, and the discussion closed by Dr. Ferguson. Dr. Henry F. Lewis followed with a paper entitled Torsion in Pelvic Tumors. This paper was discussed by Dr. Fuller.

DISCUSSION ON THE PAPER OF DR. OCHSNER.

Dr. E. W. Ryerson:—This paper opens up a large field for discussion, but I shall only touch on a few points. The essayist is right in saying that this is a much more common affection than is generally believed. The assayist believes that it is apt to begin at puberty. I am rather inclined to believe that it is more apt to begin with a change of occupation, and for this reason, I see every year a large number of shop girls who work in Marshall Field's store, at The Fair and other department stores, who are on their feet all day. They go from the grammar schools, past the age of puberty, begin to work, and immediately on standing on their feet so much they get the symptoms that have been described. This condition may occur at puberty or it may be congenital. Any change from an occupation, for instance, of schoolgirl to that of an individual who has to be on her feet throughout the day practically is apt to produce this condition. All the other causes Dr. Ochsner mentioned are likewise operative.

One of the chief causes of flat-foot is, as he has said, abduction of the foot, that is, the foot is turned out. One of the chief reasons for turning out the foot is because shoemakers all have an idea that no foot is beautiful unless the toes form an isosceles triangle, so that the big toe is abducted into hallux valgus, which later causes a change in the angle of the foot with the tibia. We call it pronation of the foot; that is, the astragalus turns outward, under the tibia. A large proportion of the cases of flat-foot are not flat-feet at all. They are simply abducted feet. There is in many instances an extremely painful foot, with no flattening of the arch at all, but a violent and painful strain on the ligaments which bind the tarsal bones together, because of the abduction of the foot. If we correct this abduction, we take more than one-half of the proper means for treatment.

A form of shoe which helps to cause flat-foot is such a shoe as is shown in one of the pictures here, with a short heel. The heel does not come forward far enough and the result is that instead of the weight being carried upon the anterior slanting surface of the os calcis, as it should be, to a certain extent, by pressure of the soft tissues, the foot is pivoted here on a fulcrum at the heel, and the entire weight of the body presses down upon that fulcrum through the middle of the foot and tends mechanically to flatten it. That is why so few so-called society women, and other women of social tendencies, but of not quite such exalted position, who wear extremely high heels, the so-called French heels, rarely have flat-foot. The French heels are placed well forward, almost under the middle of the foot, to make the foot look shorter, and they support the foot underneath in direct line with the weight of the body. If we can adapt them, so that the os calcis is tipped a little higher on the inner side, we help a great deal in these cases of flat-foot.

Most of these cases should be called weak foot and not flat-foot. Genuine flat-foot cases are rare. Real flat feet can not be treated with success by any of these conservative methods; they require operative treatment under anesthesia, with the forcible breaking up of adhesions and excision or tenotomy of the peroneus tendons, or even cuneiform osteotomy through the tarsus.

There is another form of weak foot which has not been mentioned, but which results in the production of the so-called Morton's toe. The anterior arch of the foot is almost as important functionally as the longitudinal arch. Many people come in complaining of callous places underneath the metatarsal heads; they have pain in the feet above the callous, and sometimes excruciating neuralgic attacks even where no callouses exist. This condition is known as metatarsalgia, or Morton's metatarsalgia. Not infrequently we see such people sit down on a curbstone because they can not walk any farther. I have had three or four such cases, and by making a little support of rubber or of leather, taking the weight from underneath the transverse arch and behind the callous, they have obtained immediate relief.

Dr. Ochsner's strapping method is one of the best that can be used in the treatment of those conditions of the feet he has referred to; but I do not think

it would be successful in cases of real flat-foot, because in many of these there are adhesions, and while it is an excellent method for weak feet, the treatment will not be available for true flat-foot.

The cardinal point of attack for us, in my opinion, is the shoemaker. If the shoemaker can be induced to build shoes straight, so as to let the big toe come out straight, we would not get so many cases of flat-foot to treat. When we can get the shoemaker to carry the heel far enough forward and tip it a little bit, so that it is higher on the inner side than on the outer side, we will have very few of these cases of flat-foot to treat.

Dr. John Lincoln Porter:—I want to say at the outset that I have enjoyed listening to Dr. Ochsner's paper. I think he has said more good things in a short space of time than anyone who has attempted to tackle the subject of flat-foot in a long time. The only fault I find with him is that he did not cover a larger field and say something about the more troublesome flat-foot cases.

In speaking of the etiology of flat-foot he did not dwell as much as I would upon the acute infections. I find that 25 per cent. of the moderate cases that come under my observation give a history of having had within five years some acute infection. In childhood it is apt to be diphtheria or scarlet fever, while in adult life it is more apt to be typhoid fever, influenza or some of the other adult infections; and when we come to the difficulties of diagnosis I noticed that Dr. Ochsner omitted saying anything about gonorrheal feet. In hospital work I find more cases of gonorrheal arthritis that have been diagnosed as flat-feet than any other one mistake, except, perhaps, rheumatism. As the doctor says, rheumatism covers a multitude of sins, and it is also true that the effect of gonorrhea as a cause of painful feet is often unrecognized.

In speaking of the etiology, Dr. Ryerson has said what I was going to say about the heels of shoes. The heel of the ordinary man's shoe, especially the short heel, and is designated in one of these diagrams, does not support the os calcis far enough forward to prevent its dropping, and as it drops it causes pain, which goes on to the development of flat-foot. With a short heel plus a narrow shoe, there is a tendency to abduct or pronate the foot, and until a very few years ago all of our fashionable shoe lasts squeezed the toes together, as well as pushed them outward. Those two factors of themselves are enough to start a flat-foot, and I quite agree with Dr. Ryerson that we want to get after the shoemakers in the crusade against the production of flat-foot.

From a clinical point of view, we ought to divide so-called flat-foot into three groups. As we talk about flat-foot here, many of our audience may have different mental pictures of the conditions we are talking about. Flat-foot clinically can be divided into three groups, as regards diagnosis and treatment. The first is the weak foot, in which pronation and supination are free, but in which there is pain, and when a patient puts weight on his foot, there is a tendency toward a rolling in of the tarsus and obliteration of the arch. Second, flat-foot in which the arch is lost whether the patient stands up or sits down and walking is painful though there may be fairly good supination. Third, are the rigid feet which neither the patient nor operator can supinate, and the feet are badly pronated. One of the factors in the production of the pronation is a spasmodic contraction of the muscles, chiefly of the peronei. I have seen many cases of flat-foot which seemed rigid, so that I was unable to supinate the foot and build up the arch, but when I gave the patient an anesthetic and completely relaxed the spasm of the peronei muscles the foot could be easily restored to its normal position.

I am sorry that Dr. Ochsner did not say more about the treatment of flat-foot with plates. The tendency of those who know less about the treatment of flat-foot is to resort to some sort of support, usually some form of plate, and I can only commend what the doctor said about beginning the treatment of weak foot and flat-foot, too, with strapping and exercise. The tendency of a great many is to send the patient at once to a shoemaker and have a high lift put in the arch. There is one group of cases of flat-foot which, in my opinion, needs support, and that is the second class I spoke of, in which the arch is obliterated

but which can be corrected. Patients belonging to the first class can be cured of flat-foot by judicious strapping and exercise, and patients of the third class can not wear a plate. Usually the pain is so intense on the first application of the plate that they are unable to walk. No flat-foot should have a plate underneath the arch unless it can first be perfectly restored and the arch lifted up. Another thing, a plate should always be made for the individual foot, and the patient should not be sent to a shoe store or an instrument store to buy a plate.

Speaking about adhesive plaster, I was amused last year, while in Berlin, to learn that Hoffa sent to America for adhesive plaster. While I am opposed to advertising anyone, still I want to say that the adhesive plaster known as The American Surgeon's Adhesive Plaster gives me more satisfaction than any other adhesive plaster I have used, because it is spread on strong moleskin and adheres firmly without being sticky.

In the matter of exercises in mild degrees of flat-foot, we should try to induce the patient to place the foot straight upon the floor. One of the best exercises is to try and walk like a club-footed patient, and when he gets so that he can walk that way he is not troubled very long with flat-foot.

Dr. Ochsner (closing the discussion):—I have really not very much to add. With reference to the question of plates, I referred to them in the unread portion of the paper. I think it is a disgrace to the profession of the present day for any physician or surgeon to send his patients to an instrument maker for a ready made flat-foot. To me it is unmistakable evidence of slovenliness of thought and action.

As to occupation, I agree that is a very important factor. I did not have time to say very much about it and on the whole I agree with what has been said in the discussion; nevertheless, I have seen quite a good many children complain of this affection who were going to school, who have not changed their occupation, and quite as large a percentage of them, I believe, as of those who had changed their ocupation. Change of occupation and puberty come about the same time, so it is impossible to say which is the more common cause of this condition of the feet. If you will examine high school boys you will find that a large percentage of them have potential flat-foot, and by potential flat-foot I mean a condition which will become flat-foot when there is an excessive strain placed on them. The acute infections undoubtedly cause flat-foot, and such infections may produce either a general or particular muscular weakness which will cause the symptoms of flat-foot. After those periods, when there has been excessive strain of some kind and excessive weakening of the foot, from some of the causes enumerated, it is our duty as physicians to look after these patients and not send them to instrument makers to have flat-foot plates made. Flat-foot plates have been made for this case and that case in such a haphazard way that it is a question whether they have not done more harm than good.

DISCUSSION ON THE PAPER OF DR. FERGUSON.

Dr. Norman Kerr:—I was very much interested in the method described by Dr. Ferguson of sawing the bones, because it was my pleasure as a student to assist Dr. Fenwick of Montreal, and this was the method he used in removing the anatomical curve of the head of the femur and then sawing out a corresponding curve in the head of the tibia. He reported in his paper several cases in which he claimed he got a certain amount of motion afterward, and that was the reason he adopted this particular method of sawing the bone, namely, with the hope of gaining some motion in the joint. To my mind, I think a different method of sawing the femur has certain advantages over this, because with this method we are more liable to allow lateral rotation of the leg, and I do not believe there is as much fixation as if we were to saw through the femur in such a manner as to leave a blind wedge and then saw a piece out of the tibia, into which the sawn end of the femur fits accurately. If we have any fear that we will not be able to fit the bones without previously marking them, if we will take a piece of sheet iron, which is easily sterilized, to correspond with the width of the leg

and curve the edge in this way (indicating), it can be fitted at the angle you want it, and apply it to the side of the leg and the other bone sawed. Now, we have two parallel surfaces, which will fit each other. I think that this method would be more applicable in those cases in which there are large tubercular cavities, whether in the head of the femur or in the head of the tibia, because we have more purchase than we would have in a curve in the sawed line of bone. I believe Dr. Fenwick, who was the first to bring out this method of sawnig the bone, ought to be given credit for it.

Dr. Carl Beck:—The paper of Dr. Ferguson has brought out some interesting points in regard to the technic of resection of the knee-joint, and the method he has described is certainly an improvement on those that have been used up to this time or that have been in vogue. Unfortunately, the pathology of the knee-joint is such that this method will be used only rarely. Through the treatment of Bier and through the treatment adopted by orthopedic surgeons, the field for resection of the knee-joint is now very limited; and whereas about ten or twelve years ago we resected a number of knee-joints, this operation is now becoming very rare in surgery. The Ferguson method will be applicable to only one kind of tuberculosis, and that is the purely arthrogenous type of tuberculosis, where the cartilaginous portion is largely destroyed, and where small tubercular foci underneath the cartilage are present. But as I have previously said, the field for surgery nowadays in knee-joint cases is largely confined to those in which we have deep fistulous tracts, where considerable portions of the cancellous structures of the bone are destroyed, or are the seat of tuberculosis. In these cases a typical operation nowadays is considered impossible, and we have to devise a method for almost every individual case. Typical resection of the knee-joint is practiced very rarely now among surgeons.

With regard to partial resection of the knee-joint, for the removal of the tubercular process, if we find it, and trying to fill out these cavities that have been produced by the resection, in this field I think Mosetig has done an invaluable service by his iodoform plug, which I have used myself with advantage in a number of cases. The cavity is filled and not drained.

Dr. Ferguson has called our attention to several important points, and I think we can learn a great deal from his methods of operating. One of the points to which he has directed our attention is the importance of prevention of infection of the knee-joint during the operation. This is a most important point, and this infection can only be prevented by the careful use of instruments, and by the careful non-use of the hands. If we keep our fingers out of the knee-joint cavity and use nothing but instruments, using them as sparingly as possible and producing as little traumatism as possible, leaving as few foreign particles in the cavity and the field of operation as dry as possible, the result will almost invariably be primary union. Drainage in such cases where the cavity is absolutely dry is not necessary, as the material in there easily becomes encysted; but drainage invites a flow of serum outward, so that there is great liability of reinfection of tissue spaces.

Dr. Ferguson (closing the discussion):—In my paper I did not claim any originality for the method described. Finnie, of Montreal, may have been the first to use the external incision. Sawing of the head of the femur in the manner I described, and in the way in which I prefer to do it, if I can use it, as all surgeons know, should be credited to Dr. ————————, of Montreal, and if he was not the first to remove the knee-joint in America, he was one of the first, and certainly one of the men who, after Sir William Ferguson, followed and popularized the method in this country.

Sewing up the joint completely, as recommended by Dr. Beck, I have not done; but we will find that after the secondary dressing which we have to apply, on account of the distress of the patient, the joint will be full of primary wound secretion, and the patient will complain of pain. In such cases I use an innocent kind of drainage, and that is, silkworm gut drainage, which removes

the blood serum, but you can remove that with a secondary dressing, and there is no hole left. That is why I use silkworm gut for these cases.

The sawing of the bones in different directions, as mentioned by Dr. Kerr, has been tried repeatedly and found wanting. There are only two ways in which we can recommend the sawing of the bones, namely, either saw them off square and bring the ends together, or not let them be dove-tailed. If you try to dove-tail them you have not the proper normal bone.

TORSION OF THE PEDICLE IN PELVIC TUMORS.

HENRY F. LEWIS, M.D.
CHICAGO.

(Abstract.)

The pelvic tumors most often subjected to torsion of the pedicle are ovarian, especially dermoids. The uterus may be involved in the rotation of a subserous fibroid or may be itself twisted upon its attachments. The parovarian cyst may have a pedicle long enough to become twisted. The Fallopian tube has often been subjected to this accident, usually when subject to a hydrosalpinx. Pyosalpinx, on account of the frequent adhesions, is rarely twisted on its pedicle. A pregnant tube has been observed to be constricted by a twisted pedicle, so also has the normal tube.

The following conditions permit and favor the torsion of the pedicle of a pelvic tumor: Moderate size favors torsion. The very large tumors seldom become twisted. In Storer's series of 248 cases of torsion of the pedicle of ovarian tumors 66 per cent. weighed less than ten pounds. Mobility is essential. Therefore the tumor must have few adhesions and must not be pressed down snugly into the bottom of the pelvis. Laxity of the abdominal walls, such as appears in women who have borne many children in a short time or in those who have rapidly lost much flesh, favors mobility and therefore rotation of the tumor. Tumors which are most likely to have twisted pedicles are those having marked irregularities of surface or irregular distribution of weight within their substance. Therefore, dermoids, multilocular cysts and solid tumors are such tumors. Eighty-three per cent. of Storer's cases were of this class. The equilibrium is disturbed by the irregularity of the weight and the irregularities of the surface offer many points for the exercise of the twisting forces. The period just after normal labor is one in which conditions are favorable for torsion. The longer the pedicle the more likely is the tumor to rotate, but with a long pedicle more rotations are required to produce strangulation than with a short one.

Besides the conditions favoring torsion, there must be some exciting causes in the individual case. Such causes are largely theoretical, but many mentioned seem plausible. Storer tabulates a number: In the tumor itself, irregular growth; in the uterus, pregnancy, the exertions of labor, the condition of void after labor in which the tumor falls into the space left by the diminished uterus; in the bladder, alternate filling and emptying, aided by movements of the rectum; in the rectum, violent efforts at stool, rolling of the tumor into the space left by the emptied bowel; intestinal peristalsis; influence of another tumor; certain unusual movements of the body; strains of the abdominal muscles; trauma, such as a fall or jolt.

The results of torsion to the patient and to the tumor depend upon how quickly and how nearly completely the blood supply is cut off. A complete twist will suddenly stop the circulation in veins and arteries and cause immediate necrosis. The foreign body will then likely become infected by way of the blood stream or from the neighboring alimentary tract. If death does not ensue from shock at once it will probably follow soon from peritonitis unless operation is performed. A less complete shutting off of the vascular supply is more common. The twist is more gradual and shuts off the more easily compressible veins first, thus causing edema and passive engorgement. Then follows hemorrhage into the cyst wall and cavity and a rapid augmentation in size of the tumor. Adhesions soon take place between the surface of the tumor and the surrounding struc-

tures. These are rarely very firm and do not usually much interfere with further twisting of the pedicle.

The torsion follows certain definite rules. Küstner formulated a law which is almost always followed, especially by ovarian tumors, less frequently by torsion of the tube or of the uterus. His law is that tumors of the right side twist in the same direction as the hand of the same side would in making the motion of supination. Therefore the twist of the pedicle of right-sided ovarian tumors is in a spiral opposite in direction to that of a corkscrew and the twist of a left-sided pedicle is in the same spiral as that of a corkscrew.

The clinical points of diagnosis are fairly typical. The fact that a tumor has been known to exist before the acute symptoms of torsion come on is highly valuable. Often there is a history of exertion or some slight accident just before the symptoms. The acute symptoms are sudden sharp pain usually on the side where the tumor is; this pain often radiates down the flank and thigh of the same side; the tumor rapidly increases in volume and becomes very tender on pressure; there is usually severe and persistent vomiting; in most instances there are signs of shock; later come signs of peritonitis.

Appendicitis is the disease most likely to be confounded with twisted pedicle. The sudden pain, shock, rigidity of the right rectus muscle, vomiting and local tenderness are points of similarity. Vaginal examination will usually clear up the doubt. Tubal pregnancy may be confused with the disorder in question. The absence of cessation of menses, less marked signs of hemorrhage, less emphatic signs of shock and the increasing instead of diminishing size of the tumor will be points for the diagnosis of torsion. Ruptured cyst gives a rapidly diminishing or disappearing tumor and the signs of shock are usually less than with torsion. Probably nearly all the so-called inflamed cysts are really cases of pedicle torsion. Movable kidney may itself rotate so as to twist its pedicle. Volvulus may give symptoms and even physical signs like those of torsion.

In cases of torsion of the pedicle it is almost always impossible to distinguish whether the tumor was originally tubal, ovarian or parovarian unless the previous history of the case was known. In Storer's series of 63 cases of torsion of the pedicle of a tubal tumor the tubal character of the tumor was suspected beforehand in only one.

The prognosis of torsion of the pedicle of pelvic tumors depends almost entirely upon the treatment. Aronson's figures show: Of 26 cases not operated upon there was a mortality of 81 per cent.; of 36 cases operated upon there was a mortality of only 17 per cent.

DISCUSSION ON THE PAPER OF DR. HENRY F. LEWIS.

Dr. William Fuller:—I would like to speak with reference to the strangulation of abdominal and pelvic tumors produced by torsion of their pedicles. Strangulation due to a twisted pedicle will depend, first, on the degree of tightness of the twist; secondly, on the size and length of the pedicle. In some tumors several turns may fail to bring about strangulation, while a single rotation in other tumors may result in complete occlusion of all the vessels in the pedicle.

Dr. Lewis referred to gangrene of these tumors. It seems to me very important that we should remember that tumors of the abdomen deprived of their blood supply in the manner described in the doctor's paper to-night rarely, if ever, result in gangrene. The operation often discloses a dark or even black appearance of the tumors, resembling, perhaps, at first glance, a gangrenous condition, but which does not often occur. If such tumors after their removal are emptied of the blood contained in them they remain no longer black, but show at once their normal color.

The fact that the air can not reach these tumors, except through a trocar or aspirating needle, or possibly some accident to the bowel wall through which air may enter the peritoneal cavity, explains why gangrene of a pelvic or abdominal tumor whose pedicle is twisted rarely ever takes place.

CHRISTIAN COUNTY.

On July 18 the Christian County Medical Society met in Taylorville and the meeting was one of unusual interest. The following visitors were present: Drs. J. Young Brown and Wm. Engelbach of St. Louis and Dr. Wm. Duncan of Pawnee.

The forenoon session was held at the hospital, where Dr. Brown performed a hernia operation under spinal anesthesia. A case of hernia that had been operated on by the injection of paraffin was present for examination and was of more than passing interest as it had been operated on two or more times previously. A lad who had broken his thigh added to the clinic already at hand and afforded Dr. J. J. Connor an opportunity to demonstrate the merits of the new hyoscin-morphin-cactin anesthetic, on which he read a paper in the forenoon. At 1 o'clock the society repaired to the Antler's hotel for dinner.

In the county court room at 2 o'clock the meeting was called to order by the president, Dr. J. J. Connor, and after the usual business the report of the delegate to the State Society meeting was given. The first paper, From Miracle to Medicine, was passed by as its author, Dr. A. F. Turner, had not yet arrived, and the next subject, Remarks on the Surgical Treatment of Septic or Diffuse Peritonitis, was presented by Dr. John Young Brown of St. Louis. The doctor entered into the origin of the disease, its pathology, prognosis, and paid especial attention to the treatment, which may be summed up in "The shortest possible operative procedures, that will evacuate pus and infection and disturb the organs as little as possible and then drain and use abundant proctolysis of normal salt solution." His address was certainly excellent and in the discussion but one member dissented from his views, while all others who took part heartily agreed with him.

Dr. Wm. Engelbach, also of St. Louis, next addressed the society on Gastric Tetany and presented a case that had been under his care and had undergone an operation at the hands of Dr. Brown. This was a very interesting as well as rare case. It was interesting both on account of its rarity and from the successful recovery that ensued. In this case there had been a gastric ulcer near the pyloris and the resulting cicatricial formation seemed to be the exciting point. The tetany involved the hands first, then the feet, then other parts of the body, and was excited by the ingestion of food. Emptying the stomach would often relieve the patient of the spasms (as well as her dinner), but proved burdensome and distressing. At the present time, some two or three months after operation, the lady can eat almost anything she wishes and enjoys it without discomfort of any kind. Dr. Engelbach dwelt on the points of diagnosis and the poor prognosis of these cases in general.

Dr. M. W. Staples of Grove City read a paper on The Value of Organization. Instead of being dry and prosy, as such subjects often are, the doctor was heartily applauded for his views and expressions.

Dr. J. J. Connor of Pana called Vice President J. H. Dickerson to the chair while he read a paper on Hyoscin-Morphin-Cactin, the New Anesthetic, Its Use and Some Experiences With It.

In this the doctor reported its use in two obstetric cases in which the patient felt no pain at all and one amputation of a finger in which the man talked about the operation and commented on its performance and said he felt no pain. The boy with broken thigh mentioned above afforded an illustration of its use before the society. This lad experienced very little pain during the reduction of the fracture and was able to talk to the various members, answer questions and make comments of his own.

On account of the lateness of the hour, the last paper, Phenyl Hydrazin-Test for Sugar, by Dr. T. A. Lawler of Taylorville, was omitted. The fact that the meeting continued from 10:30 a. m. to 6 p. m. is evidence that it had more than passing interest.

Two members were added to our list.

CLARK COUNTY.

The Clark County Medical Society met in regular session July 11, at 1 p. m. in Dr. Bruce's office in Casey. Members present: Burnsides, Johnson, S. W. Weir, L. J. Weir, Williams, Ryerson. Visitors, Drs. Akester, Stoltz and Heywood. Dr. I. L. Firebaugh of Robinson was present as an invited guest. Dr. S. W. Weir reported a case of empyema which had been operated but was not doing well. Other similar cases were reported in the discussion, which was participated in by all present.

Arrangements had been made for the Crawford County Medical Society to furnish the paper for this meeting and our society to present a paper at their meeting later in return, and Dr. I. L. Firebaugh presented the subject of Fractures, giving a general description of fractures, causes, symptoms and treatment, then took up fractures of the different bones in detail, offering many practical points. His efforts were well received by the society and a lengthy discussion by all present followed. A rising vote of thanks was given Dr. Firebaugh for his entertaining and instructive address. The interest in the meeting was excellent and lack of more time required us to reluctantly adjourn.

DOUGLAS COUNTY.

The regular quarterly meeting of the Douglas County Medical Society was held in K. of P. Hall, at Tuscola, July 11, 1907. On account of the weather only nine members were present. Dr. McNeil, our representative, gave the society a most excellent report from the State Society. Dr. W. S. Martin of Tuscola was elected as medico-legal representative from Douglas County to the State Society and Dr. W. C. Blaine of Tuscola as representative to the Legislative Committee of the State Society.

FAYETTE COUNTY.

The Fayette County Medical Society met in the Supervisors' Room at Vandalia, Ill., Wednesday, July 10. The following program was carried out: Valvular Heart Disease, Dr. A. McReynolds, Vera. How to Avoid and How to Fight a Malpractice Suit, Hon. J. J. Brown, Vandalia. Epilepsy, Dr. Marc Ray Hughes, St. Louis.

FOX RIVER VALLEY MEDICAL ASSOCIATION.

The eighty-fourth semi-annual meeting was called to order at 10:20 o'clock in Unity Hall, Elgin, May 14, 1907, President A. A. Fitts in the chair. Twenty members were present at that hour, but the number increased to forty at 11 o'clock. Dr. Frank J. Mahan of Algonquin was unanimously elected to membership. Dr. Achard of the program committee having removed from the district, Dr. J. W. Dreyer of Aurora was elected to fill his unexpired term. Dr. Nason of the same committee being absent, Dr. Tapper of Elgin was appointed to serve in his place for this meeting. Dr. H. J. Gahagan, Elgin, reported that a joint meeting with the Aux Plaines Branch of the Chicago Medical Society, would be held at Wheaton June 26, at which Dr. W. F. Scott of Maywood would read a paper on Surgery of the Prostate, and Dr. W. C. Bridge of Elgin a paper entitled The Etiology and Pathology of Tuberculosis in Infancy and Childhood. The secretary was instructed, as soon as all the arrangements are complete, to send notices to all the members.

The secretary-treasurer reported some of last years' dues still unpaid, and explained that being unable to obtain the manuscript of the papers read at the Geneva meeting, he could not publish them as directed. He called attention to the wishes of the Bureau of Water Survey that the society would investigate and endorse its work, and read the resolutions relative to life insurance examinations submitted by the Kentucky Medical Society. The report of the secretary-treas-

urer was accepted and the life insurance examination resolutions adopted as follows:

WHEREAS, Many of the life insurance companies have notified their medical examiners of a reduction of examining fee from $5 to $3, and

WHEREAS, We as physicians, realizing the responsibility incident to proper examination of the individual, believe such reduction to be unjust, therefore, be it

Resolved, That the Fox River Valley Medical Association in session assembled do hereby declare such reduction to be unjust and respectfully request that no physician legally authorized to practice medicine in Illinois accept such reduction of fee, and further that any physician accepting such reduction be guilty of a breach of professional courtesy.

Resolved, That it is the sense of this association that hereafter in each examination for life insurance in which urinalysis is required the minimum fee shall be $5.

Resolved, That the several component societies forming the state society be requested to adopt these resolutions. That the above rates shall not apply to industrial medical inspections, without urinary analysis, for amounts less than $1,000. That no member of this association shall enter into any contract or agreement with any corporation, society, association, company, or individual to examine applicants for insurance for any stated or lump sum, thereby evading the spirit and instinct of the foregoing resolutions. That the payment of all fees shall be authorized by the home office of the society or corporation to which such application is made and under no circumstances shall the examiner receive or accept any part of this fee from any agent or other person or corporation, unless the full fee be paid by the authority of the home office. That each member of this association pledge himself or herself in case a fellow member be removed from the position of examiner for any corporation or society solely because of this action of the medical profession, that he or she will not accept an appointment from such corporation or society as examiner, nor make any examination for same in Illinois. That each member of this association bind himself or herself by a pledge to be presented by him or her to the secretary, to abide by these resolutions.

The society then passed an amendment to the constitution providing for the reception of members by transfer from other county societies of this state on presentation of proper credentials, and an amendment to the by-laws providing for the election instead of the appointment of delegates to the state or other meetings. The next order of business was the selection of a delegate to the Rockford meeting of the state society. This resulted in the election of Dr. H. J. Gahagan of Elgin.

The society then listened to a paper on the Clinical Aspect of Kidney Diseases, by Dr. W. J. Calhoun of St. Charles.

CLINICAL ASPECT OF KIDNEY DISEASE.

W. J. CALHOUN, M.D.

ST. CHARLES.

The question of the clinical aspect of kidney disease is so broad that I will confine my remarks to the acute and chronic interstitial forms of nephritis and go into some of the details of the effect of the chronic form upon the circulation.

When we say the patient has Bright's disease—a very common expression—we refer, usually, to a person who is able to be about and to do more or less work, but who suffers from more or less continued ill health. The popular term "Bright's disease," then describes very well a certain form of degeneration of the arteries and kidneys. More interesting, however, are cases of disease of the kidneys in which the patients present very acute symptoms, but which, under appropriate treatment, frequently go on to complete recovery. Thus there are two well-defined groups of cases of Bright's disease—the one comprising many individuals who are more or less chronic invalids, the other patients who are attacked suddenly, who are very ill for a time, but who have a fair chance of recovering.

The classification of kidney disease is still to a great extent a matter of clinical symptoms. Attempts to arrange diseases of the kidneys according to what is actually seen by the microscope after death are not altogether satisfactory in their results. The kidneys which after death show the plainest changes are often those which gave the person the best chance to get well. On the other hand, people die of kidney disease, although there was but little apparent disease in the kidneys themselves. The reason for this is that affections of the kidneys are rather of minute details of structure, and the small cells of the kidneys may be degenerated or paralyzed without producing any change in the general appearance of the organ.

In acute nephritis we have an acute inflammation of the kidneys, and either of a mild or severe character. The onset is sudden, as a rule, but varies with the exciting cause. Chilliness, nausea and vomiting, pains in the back, and within twenty-four hours dropsy, are seen in some cases. Children are subjected to convulsions (uremic), and in severe cases adults are no less liable. Fever may be present, but it is neither constant nor high. The early appearance of puffiness of the eyelids and face and of pallor of the skin is characteristic. Soon, and sometimes at first, a swelling occurs about the ankles and legs, and in severe cases dropsy invades the whole body. The scrotum, penis or labia may in such cases become enormously swollen, the skin presenting an almost translucent appearance. Often local symptoms are absent, as pain and tenderness in the lumbar regions; they are never marked.

Micturition may be frequent and accompanied by a slight burning and vesical tenesmus, due to the concentrated urine. In very severe dropsy the tense dry skin may become sensitive or even painful on pressure, bodily movements are often painful and difficult in cases of marked anasarca. Cardiac hypertrophy may be present in a slight degree. The aortic second sound is accentuated. Epistaxis appears occasionally and subconjunctival hemorrhages follow uremic convulsions.

Uremic manifestation may supervene at any period, appearing early in the most severe cases with intense headache and backache, vomiting and convulsions.

I will here report a case which I had under my observation recently and I hope by so doing to elicit a discussion which will enable me to cure my next patient.

Richard S., aged 9 years; mother and father well; was always a strong healthy boy until last fall, about six months ago.

About this time his mother noticed that he had great difficulty in retaining his water, having urgent calls to urinate every hour or two of the day and night, and soon after this symptom was first noticed it was observed that his face was puffy and his eyes swollen on awakening in the morning. This condition continued and in the course of a short time his mother noticed that his feet and legs were also swollen.

I was called to see the boy and found him as described by his mother. At times there was slight improvement, but his general course was toward an increase in all the symptoms. In about one week there was a condition of general anasarca, the face being so swollen it was impossible for him to open his eyes; his legs, arms and abdomen being enormously enlarged by the exudations of serum.

The temperature was moderately elevated, ranging from 100 to 101 F. The pulse was hard, wiry and rapid; the respiration was increased. There was found marked pallor of the face and anemia, quite characteristic of this disease. An examination of his urine gave the following results: Color, dark; reaction, acid; specific gravity, 1030; albumen, great quantity. The albumen was so abundant that boiling caused the urine to coagulate into almost a solid mass in the test tube. The amount of urine passed per day was from one to three ounces, with the exception of about thirty-six hours, when there was complete suppression. Duration of attack was three weeks. Cause of death, acute pulmonary edema.

This is a clinical picture of a case of acute parenchymatous nephritis, or simple acute nephritis of children. This is the most common form occurring as a sequel to the infectious fevers, following exposure to cold, and at times occurring without any apparent exciting cause.

Nephritis is of frequent occurrence, both in infants and older children, and usually follows some of the infectious diseases, as influenza, measles, varicella, pertussis, typhoid fever or the acute diarrhea.

The most common factor, however, is scarlet fever. Nephritis usually develops during the third week of the disease, but especially in septic cases, or those with severe throat lesions. It is not unusual to find albumen in the urine during the height of the fever.

The most interesting point in this case is the fact that it was apparently caused by exposure to cold. Boy got wet going to school, and remained in school all day with wet clothes and feet. This is a frequent exciting cause of nephritis. Just as sudden changes or exposures in one person will cause an inflammation of the respiratory tract, with coryza, pharyngitis, bronchitis and cough, and in another a congestion, and inflammation of the intestinal tract with diarrhea and other symptoms of indigestion, so, as in this boy, they may produce an acute inflammation of the kidneys with the accompanying grave symptoms.

The diagnosis of acute nephritis offers no difficulty in the diminution in the quantity of urine, the swelling, first in the face and going on to a condition of general anasarca, and the presence constantly in the urine of albumen in considerable, or as in this case in large quantities, makes the nature of the disease very evident. When death occurs from diseased kidneys, the direct causes are heart failure, uremia and edema of the lungs.

The subject of chronic nephritis is so broad that the best way to approach it is with a typical common case—a case of chronic kidney disease in which the kidney has undergone changes similar to associated changes in the blood vessels and some other structures of the body.

Patient.—R. G. This man is 40 years old. His family history is negative. He has been in the habit of drinking quite steadily. He has never had syphilis or any acute disease. Up to a month before I saw him he did not notice anything was the matter with him, but at that time, after having been drinking a little more than usual, he began to suffer from headache, his stomach became disturbed, the urine lessened in amount and he noticed that his legs were swollen and that he was short of breath.

Examination of urine showed a specific gravity of 1002 and a faint trace of albumen. He passed a moderate amount of urine—from 35 to 49 ounces a day.

This man had had what is popularly known as Bright's disease for a long time before his present attack began. He had been suffering from the effects of alcohol on the blood vessels and kidneys; his kidneys had been the seat of an inflammation. This inflammation instead of being like the ordinary inflammation that we see on the surface of the body, was characterized by the production of new connective tissue; for that reason the kidneys had become hard and contracted and carried on their work with difficulty.

A strange thing about contracted kidneys is that they excrete a larger quantity of urine than normal kidneys; the specific gravity, 1002, is very low indeed for urine. The average person with chronic Bright's disease passes urine with about one-half the normal specific gravity, and in quantity about half as much again as a well person.

I find that the earliest manifestations of chronic interstitial nephritis are high arterial tension, headache, palpitation of the heart, dizziness, nausea, edema of the feet and often of the eyelids, shortness of breath, ringing in the ears, albuminuria and frequent micturition, especially at night.

Chronic interstitial nephritis is a disease characterized by a degeneration of the kidneys and the circulatory system. One can never separate the circulatory apparatus from the kidneys. The first thing that may be noticed is the high arterial tension of the blood and circulation. The cause of this high arterial tension is mechanical, and its origin is in the action on the blood vessels of a retained poison that should be carried off by the kidneys. The work of the kidneys is to remove from the circulation fluids and the waste products of the chemistry of the body. In Bright's disease the kidneys are deficient in action and something is left in the circulation that ought to be removed. This substance circulating in the blood vessels, causes an irritation of the muscular coats, in consequence of which the vessels contract.

The muscular fibers of the arteries gives them the power to contract. That power of the blood vessels to contract and expand is one of the most important in all physiology. For instance, suppose a limb is paralyzed and it becomes swollen. The reason for this is that the nerves being interfered with, the blood vessels are no longer under proper control and they allow the blood to accumu-

late and finally the blood serum to escape. It is more difficult for the heart to keep pumping, but the heart is most wonderfully controlled by the nervous system and is regulated to give a sufficient blood supply to any part of the body as required; so the heart works harder to do its work, but the blood vessels continue to resist. The result is an increase of the pressure in the blood vessels. This is the cause of high arterial tension in Bright's disease.

It may be said that the early stages of chronic interstitial nephritis usually escape detection, or they are discovered accidentally by the routine examination of the urine of patients ill with other diseases, or in the examination of applicants for life insurance, or other certificates of health, when finally, after a number of years, the disease does not produce symptoms, they are usually of such a nature that they are likely, for a time at least, to be attributed to disease of some organ other than the kidney. Thus while the patient may present himself to his physician with the idea that he is suffering with diabetes on account of the large quantity of urine that he voids, he is just as likely to complain of dimness of vision. The consequence of albuminuria neuroretinitis or of one of the many manifestations of chronic uremia, such as dyspnea, asthma, gastrointestinal derangements (gastric catarrh, gastric hemorrhage and diarrhea), or headache, hemicrania, tinnitus aurium or vertigo, or pains in the muscles or joints or eczema, of palpitation of the heart and precordial distress, or the patient in apparently good health, may suddenly develop a severe and even fatal attack of cardiac failure, pass into uremic coma and die.

Revealing itself thus in different ways, the diagnosis of chronic interstitial nephritis depends on the results of an examination of the urine and of the cardiovascular apparatus, and in view of the oftentimes slight evidence in the urine of renal disease, the cardiovascular lesions assume considerable importance. The clinical evidence of the cardiovascular lesions consists of hypertrophy of the heart, especially the left ventricle, accentuation of the aortic second sound and of increased arterial tension.

The changes in the pulse are of great diagnostic value. In the early stages of the disease, the arteries being contracted, the pulse is small; the internal pressure being increased, the arteries resist compression and flattening; on account of the internal pressure and the contraction of the vessels, the pulse waves are small. The pulse is hard and resistant to the palpating finger. The artery remains persistently full between beats (this is the characteristic feature), and considerable pressure is required to obliterate the pulse. Later to this is added the evidence of arteriosclerosis and later still the more characteristic changes of atheroma.

As I have said before, the existence of these cardiovascular changes and the kidney lesion may for a long time remain entirely unknown to the patient and be unsuspected by the physician. So long as the heart continues to perform its increased work will no symptoms occur. Should, however, the increased quantity of the urine, or the development of slight swelling about the eyes or ankles attract the patient's attention, or should he suffer epistaxis (usually of serious moment), or from dimness of vision or from severe muscular cramps in the calves of the legs (which are quite common), or from any of the symptoms of chronic uremia, inquiry on the part of the physician may elicit the information that for months, possibly years, excitement and exertion have been productive of breathlessness and palpitation of the heart, but having an obvious cause they were regarded as of no particular significance. As the disease advances, however, the nutrition of the heart no longer keeps pace with its enlargement, degeneration ensues and the evidence of embarrassed circulation results. It is now that symptoms referable to the cardiovascular system dominate the clinical picture. To the hypertrophy of the heart there supervenes dilatation, and to disease of the left ventricle is added disease of the right.

There results cardiac asthma, congestion and edema of the lungs, bronchitis, gastrointestinal disturbance, generalized edema and effusions within the serous cavities and alteration of the urine. The symptoms referable to the heart and lungs, at first transitory and nocturnal, become permanent, the other symptoms

mentioned are added, and if relief is not afforded, death ensues with cardiac failure or uremia, or both dominating the final scene.

So long as cardiac compensation is maintained, the diagnosis of chronic Bright's disease is evident from the results of an inquiry into the antecedents of the patient, the special etiological factors in the case, the different clinical manifestations and an examination of the urine and of the cardiovascular apparatus. Indeed, a diagnosis based on an increased arterial tension, accentuated second aortic sound and the physical signs of hypertrophy of the left ventricle will rarely be wrong.

The diagnostic importance of these cardiovascular alterations can not be overestimated. They are among the earliest clinical manifestations of the disease and they may be detected even in the absence of positive signs of kidney disease in the urine. If the case is not thus recognized early, or for any reason treatment is not instituted until a hard unyielding radial artery, accentuation of the aortic second sound, cardiac hypertrophy, impaired vision and uremic poisoning are present, the golden opportunity has been forever lost and the sclerotic process, it may be assumed, whether albumen and casts can be demonstrated or not, has likewise invaded the kidney.

At the suggestion of the chair, as the two papers were so intimately related, the discussion of Dr. Calhoun's paper was deferred till after the reading of the next paper on Urinalysis by Dr. J. W. Dreyer, of Aurora.

URINALYSIS IN DISEASES OF THE KIDNEY.

JOHN W. DREYER, B.S., M.D.
AURORA.

Our present knowledge of the urine and of diseases of the urinary organs may be said to be altogether abreast of other departments of scientific and practical medicine. All of us must confess, however, that he who attempts to make his laboratory findings harmonize with the classical text-book descriptions of renal disorders is prone to meet with some rather embarrassing if not disastrous disappointments, as there are many exceptions to the rules laid down for the differential diagnosis of kidney diseases by means of the urinary findings alone. This fact has been especially well emphasized and brought prominently before the observant members of the profession by Cabot in an article published March 18 and 25, 1905, in *The Journal A. M. A.*

In a long list of tabulated cases of renal disorders where the diagnosis was made during life by urinalysis and later verified by autopsy, a marked discrepancy occurs and the question he asks, as any fair-minded man must, is this: "Is urinary examination a sure means of determining the actual renal condition?" His conclusion is that it is not. Somewhat of a shock to us, is it not? However, in looking over his table of cases, one sees that in every instance where postmortem revealed a lesion of the kidney, there was some abnormality of urine during life. Therefore, it is only a fair assumption that the error in diagnosis is not altogether the fault of the laboratory man, but rather lack of knowledge in properly interpreting what was before him.

Urinary abnormalities as they present themselves are either chemical or microscopical. Under the chemical head come in order of frequency, albumin, sugar, acetone, diacetic acid, variations in urea, and if we wish to be more technical we must include such substances as give the Diazo and indican reactions. Microscopically we deal with casts, epithelial, blood, leucocyte and pus cells and bacteria, together with variations of the inorganic deposits and rarely leucin, tyrosin and fat droplets.

Of the chemical substances albumin is the most frequent, and for convenience I shall group its occurrence under the following heads:

First—It is present in practically all renal lesions, except a small per cent. of interstitial nephritides.

Second—In the great majority of acute infectious diseases and conditions of hyperpyrexia, and giving us the so-called febrile albuminuria.

Third—Changes in the chemical constitution of the blood as purpura, scurvy

and leukemia; or, on account of abnormal substances circulating in the blood, such as poisoning due to lead, mercury, ether, chloroform, turpentine, cantharides, carbolic acid or similar irritating substances.

Fourth—Circulatory disturbances, such as passive congestion due to cardiac, pulmonary or hepatic lesions, or pressure from tumors or a gravid uterus.

Fifth—Those cases of cyclic, or as they are sometimes called, "physiological" albuminuria where albumin occurs after exertion or the ingestion of excessive amounts of proteids.

Sixth—In disturbances of the nervous system. Under this head I would class certain forms of hysteria, apoplexies, migraine, tetanus, sunstroke, and coma due to head injuries, because in many of these cases an albuminuria occurs which disappears when the more prominent clinical conditions disappear. It seems a fair presumption to assume that in these conditions there is a lack of nervous control of the kidney function. It is questionable, too, whether some cases of albuminuria following narcosis may not fall under this head.

Seventh—Finally we have those cases where the albumin is of extrarenal origin, and usually due to pus, mucus, or semen.

Pus in the urine may mean much or little. It may be from the kidney, ureter, bladder, prostate, or urethra, or be entirely extraneous to the urinary tract, as in vaginal discharges, pyosalpinges, or even appendiceal or perinephric abscesses. The different sources of pus scarcely falls in the scope of this paper, yet we may say that, as a general rule, the pus of renal origin occurs in acid urine and is smaller in amount than when from other sources.

Sugar is, of course, a constant occurrence in diabetes, but in rare cases it may be found after the ingestion of an excess of starches or carbohydrates without the occurrence of true diabetes. Very seldom, too, it may be found after head injuries and convalescence from some of the acute febrile diseases.

Lactose, which may be mistaken for sugar, is usually transient and occurs in the urine of nursing mothers when the breasts first fill. Acetone and diacetic acid are at times present in diabetes and their occurrence is usually of grave import.

Indican is the result of putrefactive changes somewhere in the body. Its presence may signify an obstinate constipation or it may mean an internal abscess, such as a pulmonary gangrene or an encysted empyema.

Urea is the end product of proteid metabolism and represents about 85 per cent. of the total nitrogenous output, the remainder being represented by xanthin, hypoxanthin nuclein bodies and uric acid. Its amount is conceded to be the best index of renal efficiency if considered along with proteid intake and bodily activity.

Of the microscopical elements casts are of the greatest importance. Several views are maintained as to the formation, but the one usually accepted is that they are due to the coagulable elements of the blood gaining access to the urine by reason of some pathological disturbance of the renal tubule, and that detached portions of these tubules become entangled in this material, thus giving rise to the different varieties depending somewhat on the character of the disturbance as well as the condition of the renal epithelium. Thus we have those casts formed of the anatomical elements, as epithelial, blood or leucocyte casts, and those others from the broken down elements as pus or granular casts, and finally the hyalin probably from those tubules with little if any normal epithelium.

Leucocytes and epithelial cells are normal occurrences when not abundant, large numbers indicate some inflammatory disturbance, and what has been previously said about pus applies here with equal force.

As to the bacteriological findings, the tubercle bacillus is of the greatest import, and while it may be difficult to demonstrate in a tubercular kidney its presence is diagnostic.

Fussell, in *The Journal A. M. A.*, July 28, 1906, gives a study of 1,666 routine urine examinations and finds some abnormality in 20 per cent. This practically agrees with a series of 1450 of my own. Obviously then, routine urine examinations are of value if one out of every five studied is abnormal. But finding an abnormality, are we to conclude that our patient has Bright's disease? I do not believe that the facts warrant the assumption, and as Cabot remarks, Bright's is possible with-

out casts or albumin, though some abnormality will be present, and Purdy insists that even in the exceptions, casts and albumin will be found if the search for them is made day after day. And therein lies the key to the whole situation. Systematic and thorough examination day after day, if need be, in conjunction with the clinical study of the case. If this is done, then the abnormalities as pointed out above may become of some value, and may be grouped conveniently under the following heads:

First—Those cases which show traces of albumin and perhaps casts, which if followed up clinically are of no pathological importance. Under this head come the cyclic albuminurias, the neuroses and the hemic changes.

Second—The albuminurias of pregnancy occurring in 5 per cent. of all primiparæ, and possibly accompanied by casts. Here, possibly, some renal lesion may actually exist.

Third—Febrile albuminuria. Here again the process may border on an acute nephritis and be accompanied by casts, changes in specific gravity, total twenty-four hour quantity and urea output, and indicating serious trouble.

As an example, allow me to mention a case of pneumonia where the above were the findings and two months later the patient died in uremic coma. The same thing is frequently seen with scarlet fever.

Fourth—Those cases showing acute nephritis with increased specific gravity, diminished urea and scanty twenty-four hour quantity; also albumin; and casts of all varieties. Here a urinary analysis clears up the diagnosis before the clinical symptoms may be manifest.

Fifth—Those cases where the total quantity is markedly increased, specific gravity low, but total solids and urea normal and no other abnormalities. Such cases fall under the head of diabetes insipidus, the neuroses, or may follow injuries.

Sixth—Abnormalities in twenty-four hour specific showing increased quantity, low gravity, diminished total solids and urea, and perhaps, but not necessarily, presenting albumin and casts. This is the picture in interstitial nephritis or in those cases of arteriosclerosis where the kidney has undergone cirrhotic changes.

Seventh—Abnormalities as they occur in cardiac or hepatic cases, at first probably due to a passive congestion upon which a true nephritis later becomes engrafted, as evidenced in the occurrence of albumin and casts with blood cells. Here at first the quantity may show no change and the urea be normal, but later variations occur in these.

Eighth—Those cases developing nephritis during chronic illness and showing typical urinary findings as we see in tuberculosis, for example.

Ninth—The finding of sugar, usually diagnostic of but one thing. Here I desire to mention a case presenting albumin, casts, semen and sugar, certainly the urinary findings of a grave diabetes. I learned upon following up the history of the case that it was a head injury, and in the course of a week all of the abnormalities cleared up.

Tenth—Those cases presenting inflammatory lesions somewhere in the genito-urinary tract as previously pointed out under the heading of pus.

It is in these cases that urinary examination becomes of immense value as a means of differential diagnosis, not only of the different anatomical divisions of the urinary tract itself, but in other organs. With the present means of segregation and the cystoscope, the source of pus should be an easy matter to determine.

To show the value of urinalysis as a diagnostic aid, I wish to digress just for a moment to cite two cases:

CASE 1.—Mrs. W., aged 59, seized with severe pain in the right hypochondrium, chills, fever, elevation of temperature. Examination revealed rigidity of right rectus and tenderness about gall-bladder area. Provisional diagnosis cholecystitis. Urine showed an acid reaction. Albumin, specific gravity normal, microscopically pus, some casts, renal epithelium. Revised diagnosis, pyonephrosis, later confirmed by surgical intervention when a large abscess was evacuated and fifty-three calculi escaped.

CASE 2.—Mrs. W., aged 35, seized with a pain in right side, chills, fever,

elevated pulse, rigidity of right rectus and tenderness just above McBurney's point suggestive of peritonitis, probably due to an appendicitis. Urinary examination revealed an acid urine containing albumin and pus, with occasional casts and some renal epithelium. Diagnosis of pyelitis confirmed by clinical test when symptoms disappeared and urine cleared up under active exhibition of urinary antiseptics.

These two cases, with one previously mentioned, illustrate the value of a careful scrutinizing urinalysis in conjunction with a careful clinical study of the case. The diagnostician has not done his full duty until then, and not till then does urinary examination become of its greatest value. Nor is it sufficient to be satisfied with an occasional test for albumin, but to reap the full benefit we must make our analysis complete, getting the total quantity, studying the urea output, search for microscopical findings, and then fit in our data thus gained with the clinical picture. If this is done, then urinalysis needs must stand at the head of all laboratory methods of diagnosis to-day. And in conclusion I cannot urge too strongly the early formed habit of routine careful urinalysis.

DISCUSSION.

The discussion, which was participated in by Drs. Bridge, Tapper, Burlingame, Slate, DeWitt, Hindman, H. L. Pratt, Van Patten, Pelton, Richardson, Abbott, Stealy, and Allen, showed the general opinion of the society to be that physicians are too apt to base their diagnoses and prognoses on the clinical findings alone and leave out of the consideration the personal equation of the patient, his environment, temperament, heredity, arterial changes, etc.; that no rule of diet applicable to all cases can be laid down, but that each case is a law unto itself and should be studied individually; that many examinations of the urine should be made before making a diagnosis; that the percentage of albumin, especially in old cases, is no criterion for a prognosis; that patients sometimes surprise their physicians by recovering from rather grave conditions; that physicians should, even in the most hopeless cases, do all possible to alleviate the symptoms and prolong life and keep the patient from falling into the hands of the quacks and patent medicine fiends, and also take the time and trouble to instruct the laity so that the public would not be deceived by the newspaper diagnoses of kidney diseases flaunted before it. Many cases were related illustrating the various points made, including some unusual causes of apparently grave kidney trouble. A series of six cases was reported of unsuspected Bright's disease discovered by retinal examination and showing the average length of life thereafter to be about six months; also two cases where unfavorable prognosis, based on retinal changes, proved erroneous.

Under the head of new business Dr. MacDonald inquired what was the policy of this society regarding contract practice; he stated that members of this society had made contracts to take care of the members of certain organizations for a certain sum per month per member (usually $1). President Fitts thought the matter belonged among the duties of the board of censors; Dr. Scott thought there should be an amendment to the constitution to cover the matter. Dr. Campbell asked for a definition of contract work and Dr. Scott replied that when a physician agreed to take care of a society or body of men for so much per head, or made lump sum insurance examinations, he was doing contract practice. Dr. Rutledge stated that according to that he did nothing but contract practice. Dr. Bridge said that while there might be some difference of opinion about borderline cases, there were several phases of work that all would agree was contract practice. President Fitts thought the making of more laws was of no use as it depended much on the grade of intelligence of the patient whether he employed the Indian doctor or the educated physician. Dr. Tapper believed the fee bill should be maintained. Dr. Pelton thought the society should take some action in order that the board of censors should know its sentiments. Dr. Scott moved that the chair appoint a committee to consider the matter and bring in a report for the society to act upon at the next meeting. The motion was carried and the chair appointed as such committee Drs. MacDonald, Rutledge and Pelton.

The society then adjourned to the banquet room where they were joined by the ladies and spent a very pleasant two hours or more, interspersed with music and toasts.

GEORGE F. ALLEN, Secretary.

MACOUPIN COUNTY.

The Macoupin County Medical Society met in the Masonic Reading Room, July 23, at 10:30 a. m., with Dr. William Gross of Gillespie in the chair. Those answering to roll call were: G. E. Hill, Girard; L. H. Corr, J. P. Denby, C. J. C. Fischer, J. C. Matthews, J. Palmer Matthews, J. H. Davis and F. M. Wood, of Carlinville; E. B. Hobson, J. N. English, Chas. D. King, Wm. Gross, Gillespie; H. A. Pattison, F. A. Renner, Benld; Dr. J. J. Suik, St. Louis, Dr. Adolph Knobbe of St. Louis, and Dr. Frank Norbury of Jacksonville were the guests of the society.

Treasurer's report showed a deficit of 50 cents from last report, but the receipt of $1.00 initiation fee leaves a surplus of 50 cents. Dr. Gross proposed the following names for membership and being acted on favorably by the committee they were, on motion, elected members of the society: David S. Bley, Staunton, graduate of Jefferson Medical College 1875; A. H. Hunter, Marion Simms-Beaumont, Staunton, O. F. Allen, Rush, 1900, Mount Olive; C. S. Ambrose, P. & S., St. Louis, 1904, Mount Olive; W. G. Auer, University of Michigan, 1901, Staunton. The same favorable action was taken on the applications of Drs. Robert E. Bley, Jefferson, 1877, Bunker Hill, and Dr. Knoop of Chesterfield.

Dr. Gross then delivered a short salutatory address in which he wished that the members should devote some time to original research, and report on the subjects near to his heart: 1. Opsonins and Vaccine Therapy. 2. Origin of the four cardinal temperaments, and their relation to disease, viz., Nervous, Sanguinious, Bilious and Phlegmatic. 3. Electrons and their relation to human life.

The Board of Censors reported Carlinville as the next place of meeting, on the fourth Tuesday in October. Essayists: Drs. Aubuschon, J. P. Denley and J. S. Collins, on Disease of the Rectum.

Dr. Wood presented a child with the heart on the right side. Auscultation reveals the apex beat inside the nipple line in the fifth right intercostal space.

Dr. Suik reported an operation for the radical cure of ventral hernia. Photographs were exhibited of the case showing obliteration of the sac and closing of the incision into the rectus abdominis by first intention. He also reported a case of contracted pelvis. Antero-posterior diameter of 2½ inches, and an hour-glass contraction of the internal ring. This condition called for Cesarean section and hysterotomy, preceded by futile efforts with the high forceps and craniocast. The results were satisfactory to the patient and the case stands with Dr. Jaggards, Cesarean section, annually presented to the students of the Chicago Medical College as a triumph in modern obstetrics, evolved from the teachings of the great Semelweis of strict aseptic midwifery. A vote of thanks was extended to the doctor for his extended reports.

Dr. Denby reported a case of lymphosarcoma in a child found by making a microscopical examination of soft tissue removed by operation from a growth in the glands of the neck. In the discussion Dr. Norbury reported a lymphosarcoma of the testicle in a child. Dr. Suik spoke of a similar condition in the tonsils of a young woman which after extirpation and *x*-ray radiation extended to other glands by metastasis.

Dr. Norbury gave a classical description of Graves' disease with tachycardia, tremor, exophthalmos and enlarged gland. He asked if the members found the disease more prevalent in their locality now. The general opinion was that the disease is quite prevalent and many cases were reported, but was this not due to the revival of interest in the treatment by the new remedies, thyroidectin and organotherapy?

The afternoon was devoted to the reading of three very interesting papers: Dr. Noble of St. Louis read a paper on

SYMPATHETIC INFLAMMATION OF THE EYES

(Abstract.)

Iridocyclitis, an inflammation of the iris and the ciliary body, are prone to extension to the other eye by sympathetic inflammation or irritation extending through the sheath of the optic nerve. A foreign body may start an acute iritis and a plastic irititis will cloud the field of vision and by shrinking of the fibrinoplastic exudate cause excruciating pain in the ciliary nerve. Adhesions bind the iris to the cornea, causing a shriveled lens, which will act as a foreign body. Ciliary body is an elaboration of the chorioid coat around the iris. If you place a 2 per cent. cocain solution in the affected eye you will secure a severe pain on pressure with a pointed probe on the ciliary body. An inflammatory exudate into the anterior chamber takes place in iritis. In cyclitis we have cloudiness, also in the vitreous or posterior chamber, where floating particles can be observed by the ophthalmoscope on slight movements of the eye. An adhesion takes place between the iris and ciliary body and the lens becomes involved in a pseudo membrane formed behind it. A shrinkage of this tissue diminishes the anterior chamber, favored by a detachment of the inner membrane of the chorioid and the retina. This shrinking membrane explains the irritation and severe pain present in the ciliary nerves. Causes are:

1. Anterior synechia, an attachment of the iris to the cornea, with irritation of the ciliary body.

2. A shriveled-up lens acting as a foreign body.

3. Penetrating foreign bodies.

4. Penetrating wounds close to the ciliary body. Cataract operations where the iris has healed into the scar.

5. Spontaneous cases due to intercurrent diseases (albuminuria).

The only treatment is enucleation, because the presence of the injured eye is a continual source of danger to its fellow. The cosmetic effect of an artificial eye is much better than a shrunken, blind one.

Dr. F. A. Remer, of Benld, read a paper on

INFANT FEEDING.

(Abstract.)

The question whether a child shall be strong and robust or a weakling is often decided by its food during the first three months of its life. The problem is not simply to save the child's life during the perilous first year, but to adopt those means which shall tend to the healthy and normal growth of the child. The statistics of all localities show that the highest mortality of life is during the first year. In Illinois about one-fifth of all who are born die during the first year. In large cities this has been increased till the mortality reaches one-third. One-fifth of all deaths among infants occur during July. Hot weather in itself does not kill babies. Deaths are chiefly due to effects of hot weather on the food. Digestive disorders are the chief causes of death, due to improper food and inability to digest and assimilate it.

Conditions precluding mother's milk are when she is suffering from tuberculosis, nephritis, convulsions, severe hemorrhage, chorea, sepsis of any kind, epilepsy, enfeebled health and women without milk. Intervals of feeding should be regulated with systematic hours; the intervals depend somewhat on the strength and condition of the baby. Weigh the child often to find the true condition. The minimum increase for the first six months should be four ounces per week. If the child is fretful and sleepless, the mother's milk is insufficient. Begin mixed feeding, that is, give the bottle in addition to the breast. If the specific gravity is below 1.015 or below 2½ per cent. cream the milk is insufficient to nourisn the child. If milk is too rich, diminish nitrogeneous foods, prohibit alcoholics and recommend fresh air and exercise for the mother. If the

quality is good but insufficient in quantity massage the breasts 3 or 4 times daily. Poor quality and quantity calls for malt extracts or liquors; massage breasts, iron tonics and increase of nitrogeneous foods. Plenty of good milk at meal time and between meals is good for the mother.

The condition of the milk is often the cause of either diarrhea or constipation. White stools indicate excess of fats or casein or a deficiency of bile. Red stools may be due to extravasation of blood into the intestines. If from upper portion will be darker. If mucous is mixed with blood, may come from colon (colitis). Black stools may be from drugs, as bismuth subnitrate or blood. Green stools may be from infection or improper feeding. Constipation may be due to too low percentage of proteids or fats. Grass green stools are due to too much sugar, which may cause eructation of gas and excoriation of buttocks of child. Artificial feeding is often necessary to save the child. Try and secure a mixture as near the milk of the mother as possible, corresponding to the age of the child. Crying is perfectly natural to a healthy baby. Do not nurse too often and not when mother is tired and exhausted, as these conditions, with fright, grief, anger and passion have caused illness of child. Many do not care to nurse the child for the first four or five days. Insist on the opposite! During this period, even though the secretion of milk be scant, the infant should be put regularly to breast, as the nursing is beneficial to both mother and child.

Dr. Norbury's paper was on the

CARE OF THE INSANE.

(Abstract.)

Insanity is defined as a mental disorder due to some constitutional disorder. The study of the pathology has been made by four institutions in the United States. Dr. Adolph Mayer, formerly of Illinois, now of New York, is the best authority. At Ann Arbor, Mich., Massachusetts and Washington, D. C., special work is being done in the pathology of the insane. In the study of psychomental disorders mind has sensation, ideation, perception, memory and emotion. Clinical psychology is studied in sociology. Psycho-physics embraces sight and hearing. The science of nutrition has hereditary perversions, blood dyscrasias and tissue changes, due to autotoxemia, Bright's disease, diabetes, hyperthyroidization, chronic appendicitis and arteriosclerosis. These all have influence on secretions and excretions. The brain influences nutrition and perverted nutrition acts on the brain. Degenerative toxemias produce dementia precox and an adolescent mental disorder. In the state hospitals cases are treated in groups and so individual cases can not be cared for as well as in private practice or by the family physician. Senile cases should not be taken to the hospital. The associations of home and neighborhood do them good, while the hospital surroundings breed delusions of persecution. Juvenile cases, incorrigibles are essentially nervous and should be isolated and their nerves quieted. Legal rights of the insane may demand commitment when they are not clinically insane. The Packard law, originated by a paranoiac, was incorporated into the State Constitution of 1848, which says that no person can be committed for detention in an asylum except "by a jury of his peers."

MORGAN COUNTY.

The Morgan County Medical Society held its regular meeting at the Library on July 11, 1907, at 8 p. m., President Dr. E. L. Crouch in the chair. Eleven members present. Dr. Black reported having received an invitation by the Adams County Society for August, when they expect to join with Pike County and Hannibal Society to visit the cave made famous by Mark Twain and dine at the Mark Twain Hotel. He suggested an outing for the society might be a good thing, taking wives and sweethearts. Dr. Black moved a committee of three be appointed, including the chair, with power to act in this matter. Drs. Black, Bowe and Crouch were chosen.

Dr. Adams reported an Enucleation of an Eye injured by a giant cracker. The eyeball was ruptured under the conjunctiva, through the sclera. The tear was 8 mm. long and 5 mm. from the cornea. Vision was reduced to light perception. The nose and upper eyelid were also wounded to a considerable extent.

Dr. Day reported meeting at Atlantic City of the A. M. A. In the surgical section was reported two methods of treatment for ununited fractures. First, by injecting blood between the broken ends. Second, was by injecting dilute hydrochloric acid. He attended the surgical section mostly and enjoyed it very much and thought Atlantic City an ideal place for such a meeting.

Dr. Milligan thought the meeting well worth the time and trouble, especially to hear and see the leaders of thought in the profession. She enjoyed Dr. Bryant's presidential address and quoted from it, showing the lack of endowments for medical as compared with theological colleges and students.

The best discussions were on familiar topics, as, Treatment of Malnutrition, by Dr. Koplic, and Exophthalmic Goitre, by Dr. Kocher, and pure food discussion in section of Hygienic and Sanitary Science.

Dr. Black reported progress on the health ordinance, stating another ordinance had been prepared by our committee and the committee from the council, which included the mayor as a member of the board.

Dr. Black reported three cases with reference to abdominal pain as a diagnostic symptom. In all three cases the location of the pain might be entirely misleading in making the diagnosis.

Dr. Hardesty reported two recent cases of parturition, one primipara and one multipara, both L. O. P. position.

Dr. Bowe spoke on examination for life insurance and thought there was much fraud connected with these examinations. The companies on their first legs and those on their last legs do not want straight examinations.

Dr. Bartlett thought methods had changed in the last ten years, that the district agent had too much influence in making decisions.

A. L. ADAMS, Secretary *pro tem.*

RANDOLPH COUNTY.

The Randolph County Medical Society met in regularly quarterly session at Red Bud, July 9, fifteen physicians being present. The meeting was called to order by the president, Dr. H. C. Adderly, of Chester. Drs. Gault, Dinges and L. J. Smith were appointed a Board of Censors. Motion was made and carried unanimously that the effort to induce all physicians of Randolph County, whether members of this society or not, to adhere to the five dollar fee for making old line insurance examinations be continued. Dr. Perry M. Little of Willisville was elected a member. The following program was rendered: Summer Complaint, by Dr. T. Riess. Pharmacopeia and N. F., by Dr. H. A. Dinges. Glaucoma, by Dr. J. M. Ball. Extra Uterine Pregnancy, Dr. J. C. Murphy. Resection of Gut, by Dr. A. H. Meisenbach. After the scientific program was concluded Dr. C. G. Smith entertained the society.

SANGAMON COUNTY.

The Sangamon County Medical Society held its regular monthly meeting April 8, 1907, in the Lincoln Library, Springfield, Illinois, at 8 p. m., Dr. A. D. Taylor presiding. Twenty-five members were present. The following program was presented. Etiology of Typhoid Fever, Dr. S. E. Munson. Symptomatology and Diagnosis, Dr. B. B. Griffith. Treatment of Typhoid Fever, Dr. C. M. Bowcock. A case of infection with Anthomyia Canoliculans, Dr. H. C. Blankmyer. Dr. I. W. Metz was elected censor to fill out the unexpired term of Dr. G. W. Rice of Cantrall, removed. Dr. Fred Wheeler and Dr. J. D. Salyers were elected to membership.

A special meeting in April of the Sangamon County Medical Society was held in the Lincoln Library, Springfield, Illinois, at 8 p. m. The meeting was called

by the President at the request of Dr. L. C. Taylor, C. M. Bowcock, Walter Ryan, S. C. Munson, B. B. Griffith, C. W. Compton, H. A. Aschauer, A. L. Hagler and G. N. Kreider to consider the appointments of city physician and City Health Commissioner. A. D. Taylor, the presiding officer, moved that the subject of Health Commissioner be first considered.

Moved that the Sangamon County Medical Society indorse Dr. H. C. Blankmeyer for the position of Health Commissioner of the City of Springfield.

The following resolution was adopted:

"*Resolved*, That the Sangamon County Medical Society hereby indorses to His Honor the Mayor, Dr. H. C. Blankmeyer for the position of Head of the Health Department of the City of Springfield. If this appointment be made, the society feels that this department of the city's affairs will be properly administered and if supported by the administration, many necessary reforms for the city good will be secured."

Moved that this resolution be signed by the members of the Sangamon County Medical Society, present, and that a signed copy be sent to the Mayor of the City of Springfield.

Moved that the Board of Supervisors of Sangamon County be requested to appoint the city physician as in past years and that Dr. Stanly Castle be indorsed by this society and that Dr. Castle, in view of his election, divide the county hospital cases equally between St. John's and Springfield Hospital.

Moved that a petition be signed by the members of the Sangamon County Medical Society present at this meeting covering these points and that this petition be forwarded to the chairman of the Board of Supervisors.

The Sangamon County Medical Society held its regular monthly meeting in the Lincoln Library, Springfield, Illinois, May 13, 1907, at 8 p. m. Dr. Ottis presented a paper entitled The Importance of Surgery of the Stomach and Duodenum relative to Gastric Ulcer and Carcinoma. Moved that the President of the society act as delegate to the State Society meeting at Rockford. Moved that Dr. Griffith act as alternate. Moved that the delegate be instructed to use his influence to have the Illinois State Medical Society hold its meeting in Springfield in 1908. Moved that the president appoint a committee of three to revise that part of the city code relative to the health department. Drs. L. C. Taylor, Palmer, and Griffith appointed. Moved that Dr. L. C. Taylor be extended a vote of thanks for work done on the legislative committee of the State Society.

The Sangamon County Medical Society held its regular monthly meeting in the Lincoln Library, Springfield, June 10, 1907, at 8 p. m. No program was presented on account of the absence of Dr. Speier, who was to have presented a paper on Diarrheal Diseases of Children. Report of Delegate to State Medical Society. Bills aggregating $28.70 as follows: Postage, $4.50; janitor, $8; printing, $12.85; Hollister Memorial Fund, $3, and typewriting 35 cents were presented and allowed. The society takes a vacation during July and August.

STEPHENSON COUNTY.

The third quarterly meeting of the Stephenson County Medical Society was held at the Court House in Freeport, on Thursday, July 11, 1907. Dr. M. M. Baumgartner, president, in the chair. Members answering to roll call were: Drs. Arnold, Clark, Baumgartner, Bobb, Burns, Esp, Brockhausen, Mease, Morrison, Moore, Rideout, Rosensteil, Stealy, Smith, Snyder Thompson. The following program was listened to: Illinois State Medical Society Meeting, Dr. K. F. Snyder; The Opsonic Index, Dr. A. E. Smith; Dubuque Medical Society Meeting, Dr. B. A. Arnold; The American Medical Association Meeting, Dr. J. H. Stealy; A Tour Through Europe, Dr. W. J. Rideout. A very entertaining résumé of the proceedings of the A. M. A. and Illinois State and Dubuque Medical Societies was given by Drs. Stealy, Snyder and Arnold.

Dr. A. E. Smith gave a detailed account of the theories regarding opsonins and their practical application. It was the doctor's belief that it would be well to obtain the opsonic index from some of our local physicians relative to their

idea in the advancement of the medical profession as a whole, but he was afraid that if their conspicuous absence at medical meetings generally count as any criterion to go by, it would be found to be very low indeed. The doctor told of the very interesting and instructive papers read at the Rockford meeting of the state society, and at the Atlantic City meeting of the A. M. A., especially those relative to opsonins. He said that it was his belief that the doctor who will take the necessary time to attend his local society, the State and National medical meetings, is not only a better doctor for the patients he cares for, but a better man in the profession at large.

The annual election of officers was held and resulted as follows: President, Dr. Karl F. Snyder; vice president, Dr. A. E. Smith; treasurer, Dr. D. C. L. Mease; secretary, Dr. J. Sheldon Clark; censors, Dr. A. E. Smith, Dr. W. B. Peck, Dr. R. J. Burns. Our treasurer, Dr. Mease, was able to report every member in good standing.

SOME MEDICAL SNAPSHOTS.

W. J. Rideout, M.D.
FREEPORT, ILL.

Our most honored president has ordered me to give an account of myself during my recent absence from Freeport. When he modified this order by saying I didn't have to tell everything, I consented, but upon reflection I realized what a difficult task I was undertaking in attempting to give an account of my trip that would be interesting and at all worth while from a medical point of view.

In the first place, my studies and observations were in the main confined to eye, ear, nose and throat, subjects that may not interest you all, and secondly other physicians in our community have spent more time in Europe and their observations, medically, were not limited to so narrow lines as my own, so that I fear what I may have to say will seem (to them at least and probably to you all) very much like a little side skirmishing on the right or left flank, when the result of an attack from a broad and bold front is most to be desired. However, I have undertaken to mention a few of my medical observations, but should I digress, kindly remember that it usually takes a little time to get over a wandering habit.

After taking leave of Uncle Sam the first medical experience one usually encounters is a seance with mal-de-mer, and, by the way, it's no joke. Subjective symptoms: Sensations as if stomach was a large toy balloon, held by a string and trying to escape, and patient usually accommodates himself as to position quite in keeping with the efforts of the balloon. However, after it is all over, one feels quite renovated, develops a wonderful appetite and with the exhilarating influence of the salt sea air soon acquires that degree of seamanship known among old salts as getting one's sea legs, and is able to promenade the deck in most any position it assumes from horizontal to a 30 or 40 degree slant. After this experience one does not wonder at the hearty, robust appearance of the average sailor boy.

But this is quite in contrast with the feelings of the few who remain ill during the entire voyage and if seen at all on deck or in the dining saloon look as if they had heard Gabriel's trumpet call and wished to go but couldn't.

The city of London is interesting in many ways. It is said to have more Irishmen than Dublin, more Scotchmen than Edinburgh, more Jews than Palestine, more breweries than Freeport, and over a hundred hospitals. Many of these hospitals are very large, some new with modern equipment and a few old timers with equipment almost in keeping with their age. In one old institution they were using kerosene lamps in the ear, nose and throat department, but by way of apology the professor in charge said that they expected to be in their new building within a few months and were putting up with many inconveniences until that time. In ophthalmology the Royal London Ophthalmic Hospital, otherwise known as Moorfields, offers excellent facilities to the student interested in that line of work. It is the largest exclusive eye hospital in the world and its clinics are in charge of some of the most famous men in the ophthalmological world of to-day. In otology, rhinology and laryngology the Golden Square Throat

Hospital (founded by Sir Morell MacKenzie in 1863) is an excellent place for clinical work; it has an out-patient attendance of 50,000 annually, besides a large in-patient enrollment, and, although both these places as well as other London hospitals I visited are attended by men of high position in the medical profession of to-day, and one can not help but admire the skill displayed by some of them, yet I can not say that I saw there or on the continent any greater medical or surgical skill in the line of work under observation than I have seen in Chicago, Philadelphia or New York. In other lines I am incompetent to venture an opinion; however, for the student some of the places have great advantages.

In Vienna, for instance, operative work both upon the cadaver and the living subject can be had under competent instructors (as much as you like, so long as you are willing to pay for it). Some of the professors make more money teaching than they do out of their private practice, which no doubt is one reason for their great efforts educationally; but, notwithstanding this and the great prestige they have held in the past, they are beginning to realize that America is not behind in medical advancement, and in many places the medical profession are giving our country considerable credit for what America's foremost men have contributed toward the world's advancement in medicine. However, there are still a few who are prejudiced in favor of their country and still retain the idea that anything worth while can come only from them.

London hospitals are nearly all supported by voluntary contributions. The charitable ones are attended by many more well-to-do patients than I have seen in the charitable hospitals in any other city. It is not an uncommon thing to see silk hats, Prince Albert coats, fine dresses and jewelry worn by many of those patients. This, of course, cuts in on private practice, as many who could pay attend the free clinics, where they receive good attention and are treated with as much courtesy and kindness as would seem possible to be shown patients even in private practice. This is quite different from the manner in which charity cases are handled in hospitals of some other countries. In some of the clinics in Vienna they are hustled about like so many cattle or sheep, and aside from the medical or surgical attention they receive very little consideration is given them. This I noticed to be especially true in the nose and throat clinics, where a little remonstrance on the part of the patient on account of pain or gagging provokes a violent outburst of passion on the part of the surgeon examining or operating, but the patients return again, more submissive than ever.

From a sanitary point of view, London is certainly at a great disadvantage. The famous London fog is decidedly unhealthy, and during the foggy season one soon appreciates the value of London's extensive public lavatory system, where he has an opportunity every few blocks to wash and brush up for a "tuppence." London's very narrow crowded streets and some of her very old buildings which are damp and poorly lighted certainly do not approach ideals of sanitary science, but as nearly all the buildings in England have the open fireplace, ventilation of the same may be considered as good. Spitting on the sidewalks and in public conveyances is rarely seen, even though their antispitting notices may not seem as forceful as our own. Where ours say, "No spitting allowed," or "Five dollars fine for spitting in this car," those in England and in some places on the continent read more like this: "On account of danger to public health, you are kindly requested to abstain from spitting on the floor or seats of this car." There are but few medical men (comparatively speaking) in England who have received the degree of doctor. Many noted physicians and surgeons that can wear the handle of F. R. C. P., or F. R. C. S., to the other end of their names are still Mister. A doctor is one who has attained an extra high degree medically or surgically and has also paid a very handsome fee (royally).

We usually profit by the mistakes we see others make as well as by our own. I have made plenty of them, and some of you also have possibly made a few, so it may not be amiss to relate one or two that I observed even though they were of minor importance. A noted London ear, nose and throat surgeon, who is connected with one of the prominent hospitals, is a strong advocate of radically

relieving chronic frontal sinusitis by obliteration of the sinus, through removal of its anterior and sometimes the inferior wall. In this particular case, in which the sinus was quite large and deep, after usual preparations, including shaving of the eyebrow, he made his then usual linear incision through the center of the brow. In this case he removed only the anterior wall. In completing the operation, on account of the depth of the cavity, the skin wound would not meet and was left to be filled in by granulation and dermatization. A short time afterward the patient presented the unusual phenomena of having two beautiful eyebrows, the upper nearly an inch above the lower. On account of the interest manifested in his appearance by his friends, the patient returned later to have the divorced brows remarried by a plastic operation. This surgeon now advocates making this linear incision just below the brow.

At another hospital an assistant surgeon had performed a radical mastoid operation upon a middle-aged man and desiring to line the bony cavity with skin, he turned a skillfully measured skin flap from the cleanly shaven integument back of the wound into the cavity. On account of the extreme pain and swelling, a few months after the first operation, I saw the surgeon in charge of this clinic open up the cavity and discover the cause of the trouble to be a luxurious growth of hair tightly packed in the cavity and distending all the surrounding tissue that was distensible. Removal of this excellently transplanted flap and substituting a Thiersch graft from the arm soon relieved the difficulty.

The old idea that the English are slow to see a joke may be true in a measure, but one meets exceptions to this rule, and some English people are, indeed, rather witty. These may have been reared on the western coast and early in life inhaled some of the breezes of the emerald isle. A cab driver was showing an American some of the points of interest as they drove along Holburn street. When they came to the viaduct the cabby remarked: "This is 'Olburn viaduct." "Say, my friend, didn't you drop something back there?" asked the American. The cabby was perplexed for a few seconds, but soon showed that he was equal to the occasion by replying: "'Pon my word h'I did, but h'I'll pick it hup hagain when we get to Hoxford street." The marvelous skill of the cab and bus drivers winding through throngs of vehicles and pedestrians which surge through London's narrow streets excite one's admiration, and a seat on the upper deck of a two-story bus, either horse or automobile, is a good position from which to view the part of the city through which one is passing, as well as to get the benefit of the best air they have. London fogs are not constant, and the air at times is quite breathable. Everything is all right when you are on the right bus, but one has to learn how to take them. Some are marked Epp's Cocoa, Beecham's Pills, Bovril, etc., in very large letters that are readable a couple of blocks away. In fact, the buses are covered with medical and other advertisements with the exception of a small space in front and on each side left for the names of the streets through which this vehicle has to pass, and there are usually so many names that these must be in much smaller letters than the ads are, and one can't be quite sure until he learned better, if the destination of the bus he is taking is Bovril, Beecham's Pills, Picadilly or Elephant and Castle. Not only in London do the manufacturers of proprietary medicines take advantage of the buses and all other available advertising space, but many other European cities are similarly afflicted. Even the outside walls of the Great Vienna Hospital (The Allgemeines Krankenhaus) are literally covered with various kinds of advertisements. Soon after arriving in Vienna I had occasion to go to the office of Thos. Cook & Son, which is located in the heart of the city. A medical friend gave me instructions as to the best means of reaching the place. At a certain point in Alserstrasse I was to take an Odol bus, that went directly in front of this office. My friend had just made the same trip and knew what bus to take. I followed instructions, stationed myself at the proper place on Alserstrasse and soon saw a bus with the name Odol (O-D-O-L) in large letters on a large board across the top of the bus. Well, to make a long story short, I got back the same day, but learned that every bus in the city was labeled Odol, as well as many nicely wrapped bottles in the apothecary shops.

Many American nostrums are extensively advertised in Europe, but English ales, Scotch whiskeys, French wines and German beers have such a foothold in their respective countries that our friends Mr. Peruna Hartman and Mr. Celery C. Payne have not found Europe a very profitable field for the adoption of their special blends.

Among the many interesting medical clinics in Vienna is that of Gersung's, otherwise spoken of as the paraffin clinic, or the wax works. So much has been said recently regarding the untoward after-effects from paraffin injections, such as blindness produced by retinal embolism and deposits of paraffin in eyelids and other portions of face, where not intended, that the practice has been abandoned to a considerable extent by many who practiced it a few years ago, but Gersung, who is a pioneer at this work and who has made, probably, more paraffin injections than any other man, claims that the untoward results are due to faulty technic. He eliminates danger of embolism by his method of first using Schleich's solution, which also served the purpose of local anesthesia. Two syringes are used and but one needle. After injecting the Schleich's solution with the small syringe, after a few seconds he withdraws the solution and notes if it is clear; while withdrawing the solution the needle is gradually moved backward and forward to be certain that it has not passed through a blood vessel. If the solution is not stained with blood he removes the small syringe, leaving the needle in situ and attaches the larger one, which contains the paraffin, at the proper temperature and consistency, and during the injection by careful manipulation and molding of the injected portions with the thumb and forefinger of the left hand he prevents the escape of the paraffin to parts not intended (until sufficiently hardened to remain where it is put), and at the same time molds the paraffin into the desired shape. In building up a sunken nose pure paraffin is used, and for other portions of the face a mixture of paraffin with olive oil. He claims to have never had a case of retinal embolism since having adopted this method and to have had no case of migration of paraffin to eyelids or other portions of face of any importance.

A great many Austrians suffer from rhinoscleroma. This disease is also quite prevalent in some parts of Russia; also in Central America, but fewer than twenty cases have been observed in the United States, and nearly all of those have been among Russian or Austrian immigrants, but very few cases have been reported as occurring in native Americans. The disease consists in a thickening and tumefaction of the nasal mucous membrane, causing sometimes almost complete closure of the nostrils and often invading the pharynx and larynx; it is due to a special bacillus, its progress is slow and by the time the patient's attention is drawn to it he is usually too far advanced with the disease to expect any permanent relief. And the treatment is only palliative; this consists in the passage of laryngeal bougies or dilators, where the larynx is invaded to keep the passage sufficiently open for the unfortunate patient to breathe, and so long as this is done with sufficient frequency the patient can live, as the disease does not menace life in any other manner. In the nose and throat clinics of Vienna one sees daily many of these unfortunates who come for the painful procedure of wearing a laryngeal bougie or dilator for an hour in order to have sufficient breathing space for a few more days. No treatment has yet been found that has any curative effect and all surgical procedures have been followed by a rapid aggravation and extension of the trouble.

There are many more medical items of possibly some interest that I might relate, but as my medical observations were almost wholly confined to London and Vienna, and, as I said before, were limited to a particular line of study and a very short period of time, the many broad gaps I have left between these few snapshots I have given you I will leave for others (who have been there for longer periods of time and whose observations were from a broader standpoint, medically speaking, than my own), to fill up in the discussions.

WABASH COUNTY.

The Wabash County Medical Society held an interesting meeting July 23 at the office of Dr. G. C. Kingsbury. A paper was read by Dr. C. E. Gilliatt of Allendale, his subject being Cholera Infantum. Both papers were freely discussed by all physicians present. Dr. Sereno W. Schneck gave a very interesting report of the meeting of the American Medical Association at Atlantic City. Dr. Mercer was elected to fill the unexpired term of Dr. G. C. Kingsbury as secretary of the association, the latter resigning.

WAYNE COUNTY.

The Wayne County Medical Society met at the office of Dr. D. A. Hilliard at Jeffersonville, Thursday, June 20, 1907. Dr. W. M. Johnson was elected chairman pro tem. The following named gentlemen answered at roll-call: W. M. Johnson, C. E. Johnson, C. O. Truscott, E. M. Cates, F. F. Davis, D. A. Hilliard, N. J. Hall, G. A. McDonald, J. E. Dixon and J. P. Walters.

Dr. F. F. Davis gave an interesting talk on The Cause, Prevention and Treatment of Summer Diarrhea in Children. His remarks were confined to the non-inflammatory diarrhea and a spirited discussion followed with considerable criticism on the part of some in regard to the use of opiates of any kind for diarrhea in children.

No regular adjournment was taken for dinner, but at the noon hour Dr. D. A. Hilliard invited us to the nearby dining room, where Mrs. Hilliard had a feast prepared for all present. The good ladies proved themselves equal to the occasion and course after course was served in an admirable manner. It was an enjoyable hour that will not soon be forgotten.

After dinner Dr. C. E. Johnson read an excellent paper on Enterocolitis in Children. The able manner in which he handled this timely subject was enjoyed and appreciated by all present. The paper was ably discussed by N. J. Hall, E. M. Cates and others. This disease is not so fatal in children as it was in earlier days. Then many of them died. Now it is seldom fatal, especially if the physician is called early. Every physician in the county should have heard this paper and the discussion.

The subject of inflammation was then introduced by Dr. W. M. Johnson, in reply to some remark made by Dr. J. E. Dixon, and a lively discussion followed in which Dr. Johnson and Dr. Dixon were the principals, and Dr. E. Cates and Dr. F. F. Davis also participated.

The secretary read a paper on The Drug Habit, which was discussed by Drs. Truscott and Dixon.

Dr. D. A. Hilliard gave an interesting talk on Infantile Colic. Remarks were made by nearly all present.

The principal paper of the afternoon was read by Dr. J. E. Dixon on Typhoid Fever. The matter was ably discussed by N. J. Hall, F. F. Davis, E. M. Cates and others.

After giving an unanimous vote of thanks to Mrs. Hilliard and her sister, Miss Hawk, for their royal entertainment during the noon hour, we adjourned to meet at time as arranged by the president and secretary.

PROGNOSIS IN CHRONIC ENDOCARDITIS.*

FREDERICK TICE, M.D.
CHICAGO.

The importance of an accurate prognosis in chronic endocarditis is not easily exaggerated, either from the standpoint of the patient or the attending physician. While it may have taxed to the utmost the diagnostic resources of the attending physician to determine the existing lesion, for which much credit is

*Read before the West Side Branch of the Chicago Medical Society, May 16, 1907.

due him, it is of no interest whatever to the patient that he is the possessor of an aortic regurgitation, a mitral stenosis, or some other lesion. To him the only and all-important question is that concerned with the prognosis. Is he going to recover? How long must he be confined to his bed or to the house? When can he return to his business? As a patient, it is his privilege and right to demand such information, and the attending physician is in duty bound to supply such. Too frequently the subject is permitted to pass unnoticed or with the careless statement, "Oh, well, you know what heart disease means." So far as the physician is concerned, he must be able to determine the prognosis, and where no danger exists to inform the patient and in many instances relieve or diminish the anxiety and nervous tension which alone are capable of producing much cardiac disturbance. If real danger is present, the patient or near relative should be informed, in order that he may take appropriate care of himself, and perhaps conclude such business transactions as may be necessary for the welfare of his family. Then, again, to render a good prognosis where a grave one exists, or vice versa, may not always rebound to the glory of the physician, but produce the most harmful effect, especially if his reputation is not well established.

Before considering the factors concerned in arriving at a prognosis, it may be advantageous to mention the possible occurrence of sudden death in endocardial lesions. Among the laity and many members of the profession heart disease and sudden death are so intimately associated that the mere mention of one invariably suggests the other. When a patient is informed that he has heart disease, in many instances, he at once dreads the worst, and lives in constant fear of a sudden termination. The sudden death referred to here is generally expressed by such terms as "dropping down dead," or "found dead in bed." While comparatively sudden death may occur in any of the valvular lesions, and more frequently in myocardial involvement, in this form the patient has had practically no bronchitis, dyspnea, edema or ascites, but has been able to attend to his work, enjoying apparent health. In discussing the subject, Walsh remarks: "Taken as a group, valvular impediments can not fairly be cited as frequent cause of sudden death, but there is one among the number of which the tendency to kill instantaneously is so strong that the fact must always be borne in mind in estimating its prognosis, and that one is aortic regurgitation."

Broadbent, in a paper before the Harveian Society, gave as his opinion: "Sudden death is a contingency which may almost be left out of consideration in valvular diseases, except in aortic regurgitation."

In a review of the post-mortem records of St. Mary's Hospital, London, Sidney Phillips found, in 400 cases of cardiac involvement, that the endocardium was involved in 151. Of these 151 cases there were 38 with aortic regurgitation, 11 with aortic stenosis, 53 with mitral stenosis and 49 with mitral regurgitation. Sudden death occurred in 10, and in every instance the lesion was aortic regurgitation. According to Walsh, "the more pure and uncomplicated the regurgitation, the freer the heart from any other form of disease, the more likely is the individual to be cut off without a moment's warning."

The factors considered in estimating a prognosis in chronic endocardial lesions consist of the following:

I. An accurate diagnosis of the existing lesion or lesions.

Without this all further consideration and conclusions must be fallacious and absolutely without value.

While Corvisart (1806) employed percussion and auscultation and was the first to attempt diagnosis of heart disease, it was not until Laennec (1819), the discoverer of the stethoscope; Bouilland (1824), who employed accurate scientific auscultation; James Hope (1832), with his practical and clinical experiments; Stokes (1854) and Walsh (1862), with their clinical observations, had opened the way that an accurate diagnosis could be made. It is comparatively within only the last few years that anything like precision has been possible in this class of cases.

II. The relative danger or gravity of the lesion.

Observers are not agreed on this point, and the classification of the lesions is quite variable. Walsh, in a descending scale, places the various lesions in the following manner:

1. Tricuspid regurgitation.
2. Mitral regurgitation.
3. Mitral stenosis.
4. Aortic regurgitation.
5. Pulmonary stenosis.
6. Aortic stenosis.

Tyson also states: "The most unfavorable of all forms of cardiac valvular disease is tricuspid regurgitation, which occasions obstinate dropsy and dyspnea."

When we recall that tricuspid regurgitation as a primary lesion is rare, that it is almost always secondary to some pulmonary or left-sided heart lesion, it is difficult to understand why it should head the list.

While it is true that the appearance of a tricuspid regurgitation, with its train of symptoms and signs, so often marks the beginning of the end, such an event must be considered simply as a step downward in the process of cardiac failure, and the prognosis should be determined from the consideration of the primary lesion. The appearance of a tricuspid regurgitation, due to some left-sided lesion, indicates, if anything, the inability of the right heart to maintain a compensation.

Gibson, Broadbent, Babcock and many others arrange the lesions in the following manner:

1. Aortic regurgitation.
2. Mitral stenosis.
3. Aortic stenosis.
4. Mitral regurgitation.

III. The stationary or progressive character of the lesion.

It is necessary to determine this point, for, if the lesion is stationary, the resulting dilatation and hypertrophy will or will not satisfy the demands of compensation, and we know with just what we have to deal. If the lesion is progressive, then there is but one issue. Fortunately, in many instances, the nature of the lesion can be determined by considering the etiologic factors:

(a) Acute Endocarditis.

When it can be established that the valvular defect is due to some acute infection, which has subsided, the defect remains small or great, depending on the damage done, and does not increase in amount. To this statement there is one exception—mitral stenosis, which is typically a chronic progressive disease.

(b) Chronic Endocarditis.

The unfavorable features of this group consist in its progressiveness. The valvular defects become gradually more pronounced and more extensive. The hypertrophy, which has been sufficient to meet the demands, is no longer able to keep pace with the increasing lesion, or perhaps the compensation is undermined by structural changes in the heart muscle. Then, too, chronic inflammation and degeneration of the endocardium usually occur at a time in life when compensation is imperfectly established, if at all. When a murmur is detected for the first time in a patient past middle life it is necessary to determine that it is or is not due to progressive degenerative changes by the presence or absence of symptoms and physical signs. If systolic and heard over the aortic area, it is usually due to some roughening of the aorta, a slight rigidity or irregularity of the valves; when systolic and heard over the mitral area, it may be due to rigidity of the valves, slight myocardial involvement and derangement of the valvular mechanism. Many patients possess such murmurs and live for years without any discomfort.

(c) Rupture of a Valve.

The aortic valve is usually the one involved, and is always a very serious condition. Under a high pressure a perfectly normal valve may rupture, but generally there is an associated degeneration.

(d) Dilation of the Orifice—Inorganic Lesions.

1. The aortic ring is strong, unyielding, and not easily dilated, but when it does occur there is usually a dilation of the aorta due to degenerative changes, or there may be an aneurysm. In such condition the prognosis is not good.

2. The mitral ring is easily dilated. When due to fevers, anemia, or temporary conditions, and under appropriate treatment, the prognosis is good. Frequently the dilatation is secondary to an aortic lesion, and when this is the case the prognosis is that of the primary disease.

IV. The degree of the lesion.

This is by no means easy to determine, but is highly important, especially when taken in consideration with the other findings. Factors which assist in determining the degree of the lesion, and the amount of circulatory disturbance in—

I. MITRAL REGURGITATION.

(a) *The Murmur.*—Much difference of opinion exists concerning the value of the murmur. "No greater error can be committed than that of supposing the danger of valvular lesion may be estimated by the amount of murmur they habitually entail." (Walsh.) "The murmur *per se* is of little or no moment in determining the prognosis in any given case." (Osler). Broadbent, Colbeck and others are of the opinion that the murmur may be of assistance. While a loud systolic aortic murmur may indicate little or no stenosis, and a marked mitral stenosis may exist without a murmur, we can say, nevertheless, that, s a rule, a loud, long murmur indicates a better prognosis than a weak, short one. Loudness indicates force, and length that the heart is going through its systole. A loud, long systolic murmur at the apex and transmitted well into the axilla indicates a greater amount of regurgitation than a weak, short one, not so well transmitted.

(b) *Relation of Murmur to the First Sound.*—When the first sound is distinct, followed by the murmur, with an appreciable intervening silence (the delayed systolic murmur), the lesion is less than if the murmur accompanies or replaces the sound.

(c) *Amount of Accentuation of the Second Pulmonic.*—In proportion to the amount of regurgitation, the pressure in the lesser circulation is increased, and with it a more forcible closure of the pulmonary valves.

(d) *Amount of Dilatation and Hypertrophy.*—The effect upon the blood current in a mitral regurgitation consists in a backward flow from the left ventricle to the left auricle, an increase in pressure in the lesser circulation, and sooner or later the same effect upon the right heart. This results in a dilatation and hypertrophy of the left auricle, right ventricle and right auricle. As the left auricle at the time of its contraction is overdistended, an abnormally large amount of blood is thrown into the left ventricle. This produces dilatation and hypertrophy of the left ventricle. These changes are the result of the valvular leak, and may be used as a means to measure the amount of the lesion. The greater the displacement of the apex beat and the greater the cardiac dulness, the greater the lesion.

(e) *The Pulse.*—The characteristic peculiarity of the pulse in this lesion is irregularity in both rhythm and force, due to the influence of respiration upon the large dilated thin-walled left auricle A considerable leak may occur without any great irregularity, but for a working basis we may say that a mitral systolic murmur, unassociated with an irregular pulse, is of but slight consequence.

(f) *Blood Pressure.*—When abnormally high, the amount and rapidity of the regurgitation may be increased.

(g) *Symptoms Present.*—The inference is, the more numerous and severe the symptoms, the greater the lesion.

II. AORTIC REGURGITATION.

(a) *The Murmur.*—This is of but little assistance, except so far as the loudness and the length indicate that the pressure in the aorta is maintained, and the left ventricle is working with force.

(b) *Presence or Absence of the Aortic Second Sound.*—Determination of this

point is highly important. As emphasized by Broadbent, auscultation should be made over the vessels in the neck, far enough removed from the aortic area so that there can be no confusion from either murmur or the second pulmonic. When a second sound is heard in the neck it is produced by the closure of the aortic valves, vibration of the aorta and its contents, and has the positive significance that the valves are capable of closing, producing a check to the backward flow of the blood. If absent, the valves are so defective as to be unable to produce the necessary check.

(c) *Relation of Murmur to Second Sound.*—Conclusions are analogous to those in mitral regurgitation.

(d) *Pulse.*—The typical pulse in this lesion is the water-hammer or Corrigan pulse. The greater the lesion, the greater the collapsing character of the pulse. When the collapse is absent or poorly marked, even if the murmur is distinct, the leak must be slight. Certain conditions may prevent the collapsing character, as—

1. An associated stenosis, aortic or mitral.
2. Weakness of the left ventricle, as occurs in the last stages.
3. When aortic regurgitation develops in the aged, the lesion is always slight, the vessels are usually sclerosed, and do not expand, and collapse rapidly.

(e) *Amount of Dilatation and Hypertrophy.*—In this lesion the blood is permitted, during diastole, to flow from the aorta into the left ventricle, and at a time when it is in repose. Much dilatation and hypertrophy result, involving first the left and finally the right heart. The greater the leak, the greater the displacement and the cardiac dulness.

(f) *Blood Pressure.*—When high it has a direct influence in increasing the amount of regurgitated blood. The greater the difference between the systolic and diastolic pressure, the greater the lesion.

III. AORTIC STENOSIS.

(a) *The Murmur.*—Independently, it is of no assistance.

(b) *Amount of Dilatation and Hypertrophy.*—Owing to the obstruction at the aortic ring, more work is placed upon the left ventricle, and a true concentric hypertrophy results. Later the left auricle and right heart are involved.

(c) *Pulse.*—As the size of the aortic ring is reduced, it will require a greater time for the blood to pass into the aorta. The pulse, therefore, will be reduced in volume and somewhat slowed. A full or collapsing pulse is incompatible with this lesion when uncomplicated.

(d) *Blood Pressure.*—There is not the same direct influence between aortic stenosis and blood pressure as exists in some of the other lesions, due to the interposed narrowing at the aortic ring. For diagnostic, as well as prognostic reasons, it is essential that some hypertrophy of the left ventricle or enlargement of the right heart be present.

IV. MITRAL STENOSIS.

In the previous lesions the disturbance of the blood flow, regurgitation or obstruction, produced such changes in the cavities and walls of the heart and the peripheral circulation as to serve as a means of measuring the defects. In this lesion we have no such assistance and must, consequently, resort to other means. The obstruction being at the mitral ring, the amount of blood flowing into the left ventricle is reduced; no changes occur in the cavity or walls, and it remains normal or presents a relative atrophy. The left auricle and right heart become dilated and hypertrophied, and the right ventricle may participate in the formation of the cardiac apex. Mitral stenosis is a chronic, slowly progressive disease, and by studying the changes in the murmur and tones Broadbent has divided it into three stages.

First stage—characterized by

(a) Presystolic murmur at or near apex, with

(b) A first and second sound.

Second stage—characterized by

(a) A variable diastolic murmur.

(b) Changes in the first and disappearance of the second sound.

The modifications of the murmur may be many, but chiefly consist of

1. The ordinary presystolic terminating in the short, sharp and accentuated first tone. This is the mildest form of the second stage.

2. The early diastolic or the true mitral diastolic—more severe.

3. The interrupted modified presystolic murmur of Fraentzel—still more severe.

4. The modified presystolic murmur of Traube—the most unfavorable form of this stage.

The first sound is short, sharp and accentuated. "At the commencement of systole the ventricular cavity is not fully distended with blood, so that the muscular walls at the first moment of their contraction meet with no resistance; then, closing down rapidly, they are suddenly brought up and made tense as they encounter the contained blood." (Broadbent.) Samsom and others believe the sound is produced by sudden closing of the tricuspid valves.

The second sound disappears as a result of the diminution in the intensity of the second aortic from the reduced amount of blood propelled into the aorta, and from the fact that the left ventricle is no longer in contact with the chest, thus interfering with the transmission of the sound.

Third stage—characterized by

(a) Disappearance of mitral murmur.

(b) A short, sharp, accentuated first tone at apex, and

(c) Appearance of a tricuspid murmur.

The mitral murmur disappears when the tricuspid valves give way and the pressure in the left auricle is no longer sufficient to force the blood into the ventricle. Serious symptoms are never present in the first stage, usually present in the second stage, and the third stage is always a very grave condition.

V. CONDITION OF THE MYOCARDIUM.

Upon this factor much depends, and it is of the greatest moment. If the myocardium, the coronary vessels, or both, are diseased, and compensatory hypertrophy be not established, then the prognosis must necessarily be bad. Perhaps compensation has been established and maintained for some time, but nutritive changes interfere with the hypertrophy, and disturbed or broken compensation appears. Then, again, the lesion may increase in degree and the existing condition of the myocardium prevent adequate hypertrophy.

VI. AGE.

In the young up to the age of 10 years compensatory hypertrophy is established with difficulty. Aside from the danger of repeated attacks of acute rheumatism, the heart appears unable to keep pace with the double demand of physiologic growth and compensatory hypertrophy. In the aged degenerative changes are usually present and efficient compensation never occurs. After the age of 40 valvular lesions are never satisfactorily compensated.

VII. SEX.

Aortic regurgitation is more frequent in the male, while mitral stenosis predominates in the female. Generally speaking, lesions in the female are never as well compensated (Broadbent). Pregnancy increases the danger.

VIII. HEREDITY.

Hereditary tendencies have a marked influence on the prognosis. We can not have much confidence in the myocardium of one whose family is short-lived and noted for early arterial changes.

IX. OCCUPATION AND MODE OF LIFE.

The patient employed at manual labor in a shop or factory, where it is damp and the ventilation bad, who has improper and insufficient food, who uses tea,

coffee, tobacco and alcoholics to excess, who follows instructions poorly or disregards advice, can have only a stormy future.

X. BLOOD PRESSURE.

This factor has been considered under the means of estimating the amount of the lesion, but its importance is such as to require special mention. Blood pressure may influence the prognosis unfavorably if it is abnormally increased or diminished. A pressure above normal, and if sufficiently continued, may in itself lead to chronic valvular disease, or, if the heart is already involved, it will augment the lesion and unfavorably influence the prognosis. In order to maintain a circulatory equilibrium, in the presence of a high blood pressure, it is absolutely necessary that a sufficient hypertrophy of the heart take place, and if for any reason this does not occur, the prognosis is a serious one. On the other hand, when the pressure is abnormally low, the coronary circulation is disturbed, which depends much upon the pressure in the aorta. The nutrition of the heart being reduced, hypertrophy is impossible, or no longer maintained.

XI. COMPLICATIONS.

Associated changes in the myocardium, pericardium, lungs, kidneys, or blood, increase very much the gravity of the prognosis. The occurrence of a cerebral or pulmonary embolism may destroy an otherwise good prognosis. Recurring attacks of rheumatism always increase the danger.

XII. TREATMENT.

The future is far more promising for the patient who has proper treatment early; who has means to carry it out, and can be free from all business worries and anxieties. If proper treatment is not employed, and a sufficient time permitted to elapse for compensatory changes; if the patient, perhaps from necessity, is compelled to return to work, his chances are by no means so favorable.

NEWS OF THE STATE.

Dr. Jackson Piper, Towson, is seriously ill.

Dr. H. Max Reichman has returned from Europe.

Dr. J. F. Duane, Peoria, has returned from Europe.

Dr. John R. Trott, Virden, has retired from active practice.

Dr. George L. Stericker spent part of August in Old Mission, Mich.

Dr. Fred S. O'Hara, Springfield, has been elected state president of the Order of Eagles.

Dr. Broughton, of Rockford, is enlarging his sanitarium by the addition of thirty new rooms.

Dr. Levi W. Carter, Peoria, has been ill for several months and has been taken to the Proctor Home.

Dr. William Bender has been appointed associate professor of anatomy at Keokuk Medical College.

Dr. Channing W. Barrett has been appointed a member of the gynecological staff of the Chicago Policlinic.

Dr. Clarence R. Bell, Thayer, has been appointed physician of the Government Insane Asylum, Washington.

Dr. Charles I. Allen, Milton, was found to be insane July 19, 1907, and was taken to a hospital in Jacksonville.

Dr. George W. Evans, Marion, was overcome by the heat July 20 and for several hours was in a critical condition.

Dr. Nicholas Senn, who left Chicago July 6, is making a tour of South America and will return early in October.

Dr. and Mrs. Lockwood, of Virden, and Dr. L. A. Hagler have been making a tour of the Yellowstone National Park.

Dr. Victor Baccus, Chicago, sailed for Europe, August 3, to take postgraduate work in surgery in Berlin and Vienna.

Dr. Stephen C. Glidden, Danville, has been appointed chief surgeon of the hospital system of the Illinois Traction Company.

Dr. B. B. Griffith, of Springfield, is spending the summer in Colorado Springs, Colo., recovering from an infection of the foot.

The county physician of Cook County states that the insane court passed on 180 patients during July, the largest number on record.

Dr. William D. Corse, Gardenville, Md., is reported convalescent after being struck by lightning and rendered unconscious July 18.

Dr. Ewing M. K. Taylor, Leroy, has been appointed county physician of Macon County and will remove to Decatur to assume his duties.

Dr. Walter W. Greaves, LaSalle, who was operated upon for appendicitis at St. Mary's Hospital July 26, is reported to be convalescent.

Dr. W. W. Graves, of LaSalle, was operated, July 26, at St. Mary's Hospital, in that city, for appendicitis, and at last account was making favorable recovery.

Dr. George H. Fuller was taken to St. Mary's Hospital, Decatur, on July 14, where he was operated on by Dr. Barnes for appendicitis. Reported convalescent.

Drs. A. H. Beebe and C. C. Anthony, of the staff of the Illinois Asylum for the Incurable Insane at Bartonville, have resigned to enter into private practice.

Dr. Robert Emery, Peoria, indicted for murder in the case of the death of Pauline Schneider, who is said to have died after a criminal operation, was acquitted by the jury July 9.

Dr. Adolph Buettner, of Chicago, is said to have been found guilty of manslaughter, August 2, in connection with a criminal operation. The jury included a plea for leniency in its verdict.

The faculty, alumni and students of the College of Physicians and Surgeons of Chicago are uniting by subscription to honor Dean William Quine by installing a portrait bust of him in the Quine Library.

Dr. Alfred C. Crofton requests that the statement made in the May issue of this journal, to the effect that he is a graduate of the University of Pennsylvania, be corrected, as he is not a graduate of this school.

The Chief of Police of Chicago has issued the following order: "Hereafter the following will comprise the detail on police ambulances for each shift: one policeman, one driver and a surgeon, who will be in charge."

The Lake View Hospital and Training School for Nurses, of Chicago, for two years conducted as a private institution, has been incorporated, with a capital of $30,000, and will begin public work. Dr. Orlander E. Wald is president.

The Fernand Henrotin Memorial Hospital is so near completion that the faculty and directors have made a formal inspection of it and are laying plans for the opening. The formal opening will occur early in September.

A summer student of Green Hall, one of the dormitories for women at the University of Chicago, was removed to the Isolation Hospital July 10 on account of smallpox, and the sixty students in that dormitory were vaccinated by officials of the health department.

Dr. Gordon W. Rice, who has been taking postgraduate instruction in New York City for a number of months, has returned to practice in Illinois, and opened offices in Champaign, where his practice will be limited to diseases of the eye, ear, nose and throat.

Among the applicants for a license in Texas at the examination June 25, 1907, was Dr. I. G. Hubbard, of Nakomis, Ill., who passed with a grade of 84. The doctor is a graduate of the University of St. Louis, 1907. At this examination there were 93 applicants and 20 failures.

Dr. Alexander A. Whamond and other West Side physicians of Chicago have purchased the property formerly occupied by the Finsen Light Institute and have equipped the building as a general hospital. It was formally opened by a reception July 15 and was named the Robert Burnes Hospital.

At the annual meeting of the American Proctologic Society the following officers were elected: President, Dr. A. Bennett Cooke, Nashville, Tenn.; vice-president, Dr. Lewis J. Krouse, Cincinnati; secretary-treasurer, Dr. Lewis H. Adler, Jr., Philadelphia, and executive council, Drs. J. Rawson Pennington, Chicago; Samuel G. Gant, New York City and the president and secretary.

The bacteriological laboratory of the Chicago Health Department has improved its technique in the examination of material from animals suspected of rabies, so that the diagnosis can now be made in about an hour. The value of the method is attested by the satisfactory results that have attended its use in the New York Board of Health laboratories since its introduction some time ago.

A number of cases of smallpox have occurred at Mechanicsburg since the first of July, and an inspector of the State Board of Health has gone to the village to confer with the local authorities regarding quarantine. The secretary of the State Board of Health has issued a circular letter regarding the continued spread of smallpox throughout the state, and with it has sent a poster urging the importance of vaccination as a preventive of the disease.

The first step toward removing the insane from county almshouses by redistricting the state into six districts has been taken. The institution at Bartonville has been changed from a hospital for the incurably insane to a district hospital, thus giving a new district. After September 2 new cases will be sent to the hospital for the district in which the patient resides. By this ruling the State Board of Charities hopes to avoid peril, confusion and expense.

On August 3 the first issue of the *Bulletin* of the Chicago School of Sanitary Instruction, devoted to the dissemination of advice and information of the Department of Health was issued. The publication is to be weekly and will include the weekly bulletin heretofore issued by the Department of Health. In addition, the first issue discusses the milk supply of Chicago and quotes at length from a recent paper on the freedom of Chicago born individuals from cancer.

A certain Edward Dowall, 418 LaSalle street, was found guilty, Aug. 7, 1907, of obtaining money by false pretenses, by a jury in Municipal Judge Walker's court in Chicago. Mrs. Emma Miller, 134 Milton avenue, Chicago, charged that Dowall represented himself as a physician and secured $150.00 from her after he had agreed to obtain a midwife's license for her from the State Board of Health. It is remembered that Dowall served a sentence in Michigan penitentiary.

The Medical Examiners of the Mutual Life Insurance Company of New York will be pleased to learn that the former schedule of fees, namely: a flat fee of $5.00 per examination, irrespective of the amount of insurance applied for, has been restored. In addition, the company now allows a fee of $2.00 or $5.00 (according to the kind of examination required) for each examination made for the restoration of a lapsed policy. As will be seen, this places the examiners on a better basis than they have ever been in the past.

The Bulletin of the Chicago Department of Health states that, for the first time in its history, the department is receiving the active cooperation and the assistance of the Department of Police in its efforts, not only to safeguard the health, but also to promote the comfort and general well-being of the citizens. The present chief of police, George M. Shippy, introduces this new departure by an order intended to abate the intolerable hot-weather nuisance arising from failure to remove the bodies of dead animals from streets, alleys and other places.

The Secretary of the Illinois Civil Service Commission announces that the following individuals have passed the examination recently conducted by the commissioner and are eligible for appointment: Dr. Henry W. Miller, Dunning, director of State Psychopathic Institute; assistant physicians, Drs. Fred B. Clark, Elgin; Emil Z. Levithin, Chicago; Harriet Hook, Lincoln; E. Lewis Abbott, Anna; Richard F. Windsor, Angelina G. Hamilton, Ann Arbor, Mich.; Rachael A. Watkins, Peoria; Edward A. Foley, Woodstock, and Cyrus H. Anderson, McLeansboro, and first assistant physicians, Drs. Robert B. Hough, Lincoln, and Eugene Cohn, Hospital.

The Chicago Relief and Aid Society has begun the work of establishing ten centers in the congested districts of the city where children may play without being overcome by the heat. One of these tent villages is in the yard of the Henry Booth house, one at the University of Chicago Settlement, and the third at the Northwestern University Settlement. Each day volunteer physicians talk to the mothers on the proper care of children during the hot weather. The following physicians are in charge of the tents: Drs. Frances M. Allen, Julia D. Merrill, William J. Butler, John C. West, James W. VanDerslice, May Michael, Frank W. Allin, Thomas G. Allen and Grace F. Hagans.

The following appointments of surgeons have been made by the Illinois traction system of interurban electric lines, effective Aug. 1, 1907:

Dr. Charles F. Hough, Champaign, Ill.
Dr. J. W. Knott, Monticello, Ill.
Dr. G. S. Edmondson, Clinton, Ill.
Dr. F. M. Ewing, Lincoln, Ill.
Dr. Tylor Merriweather, Decatur, Ill.
Dr. F. M. Wilbur, Riverton, Ill.
Dr. G. N. Kreider, Springfield, Ill.
Dr. E. R. Motley, Virden, Ill.
Dr. J. S. Collins, Carlinville, Ill.
Dr. Auer, Staunton, Ill.
Dr. Joseph Pogue, Edwardsville, Ill.
Dr. J. W. Scott, Granite City, Ill.
Dr. Carl E. Black, Jacksonville, Ill.

Health School for Chicago.—Articles of incorporation have been granted for the Chicago School of Instruction with Health Commissioner Evans, Assistant Health Commissioner Reilly and Dr. J. Biehn as founders. Free instruction will be given in general bacteriologic work, in bacterial diagnosis of disease and in the chemical analysis of water, ice, milk

and food products. The students must serve two weeks in the city laboratory and two weeks accompanying the sanitary inspectors around the city. The faculty of the new school includes, besides the health commissioner, Dr. Frank X. Walls, chief of the antitoxin service; Charles B. Ball, chief sanitary inspector; Dr. C. W. Biehn, chief of the disinfection service; Dr. M. O. Heckhard, registrar of vital statistics; Dr. Joseph Biehn, director of the city laboratory, and Dr. Heman Spalding, chief medical inspector.

CORPORATIONS.

The Secretary of State at Springfield has incorporated the following companies:

J. R. Watkins Medical Company, Winona, Minn.; capital, $500,000; located in Elgin, Ill.; capital in Illinois, $50,000.

Chicago School of Sanitary Instruction, Chicago; instruction in public hygiene; incorporators, W. H. Evans, F. W. Reilly, J. F. Biehn.

Dr. Kirkwood Manufacturing Company, Chicago; capital, $10,000; manufacturing and dealing in medical and toilet supplies; incorporators, Charles A. Kirkwood, John C. Kristan, William Hardiman.

MARRIAGES.

WILLIAM B. HANELIN, M.D., to Miss Marion Perbohner, both of Chicago, July 31.

GEORGE ALBERT GARDNER, M.D., of Chicago, to Miss Charlotte Thayer, of Chicago, Aug. 14, 1907.

DANIEL L. GALLIVAN, M.D., of Chicago, to Miss Pauline Birchman Conway, of 142 North Eighteenth street, Philadelphia, Pa., July 25.

DEATHS.

WILLIAM TODD SMITH, M.D., Jefferson Medical College, Philadelphia, 1854; of Springfield, Ill., died at his home in that city, July 6, from senile debility, aged 84.

ROBERT G. LAYCOCK, M.D., Toronto University Medical Faculty, 1894; of Hopedale, Ill., died in the Brokaw Hospital, July 22, from pancreatitis and gall stones, aged about 65.

CARL D. STONE, M.D., College of Physicians and Surgeons, Chicago, 1898; of Chicago, died at the Michael Reese Hospital, in that city, July 18, from typhoid fever, after an illness of one month, aged 35.

SIMPSON R. DENTON, M.D., Bellevue Hospital Medical College, New York City, 1882; a member of the Illinois State and Hancock County medical societies, died at his home in Elvaston, Ill., July 10, aged 53.

LEE MCELROY, M.D., Northwestern University Medical School, Chicago, 1905; for two years an interne at the Alexian Brothers Hospital, Elizabeth, N. J., died at that institution, July 26, from cancer of the gall bladder and duodenum, after an illness of two months, aged 30.

MORRIS H. GOODRICK, M.D., Homeopathic Hospital College, Cleveland, Ohio; 1881; an alderman of Jacksonville, Ill., sometime city

health officer of Morgan County and physician to the Illinois State School for the Blind, died in his home in Jacksonville, July 28, from uremia, after an illness of two weeks, aged 50.

DAVID R. SANDERS, M.D., Medical College of Ohio, Medical Department, University of Cincinnati, 1877; a member of the Illinois State and Union County Medical societies; a veteran of the Civil War, first assistant superintendent of the Illinois Southern Hospital for the Insane, Anna, died at that institution, July 22, from disease of the stomach, after a short illness, aged 62.

LEONARD S. TAYLOR, M.D., of Elgin, died at his home in that city, August 5, of blood poisoning and melancholia following a needle prick during an operation on May 18. He graduated from Bennett Medical College, Chicago, in 1889, and, after serving as interne at Cook County Hospital for eighteen months, returned to his native city, where he has been in active practice. He was 40 years of age and leaves a wife and three children. He was a member of the Elgin Physicians' Club and of the Fox River Valley Medical Association.

HENRY E. CUSHING, M.D., of Champaign, died at his residence in that city, Sunday, Aug. 10, 1907, in the fifty-seventh year of his age. Dr. Cushing was born at Ashburnham, Mass., was graduated from Dart mouth, Andover, N. H., in 1882, and from the Chicago Medical College in 1884, and he immediately entered upon the practice of his profession in Champaign, where he remained till his death. His wife, to whom he was married in 1884, with two sons, Dudley and Donald, and other relatives, survive him. He was a member of the County and State medical associations, A. M. A., the Æsculapian Society, the National Society of Railway Surgeons, the district surgeon of the Illinois Central Railroad for ten years, president of the Twin City Physicians' Club and a member of the staff of the Julia F. Bingham Hospital.

Dr. Cushing occupied a very high position in Champaign, both as a physician and a worthy citizen. It is believed that his early death was a result of over-diligence and faithfulness to his professional duties.

At a special meeting of the Champaign County Medical Society, held Aug. 11, 1907, the following resolutions were unanimously adopted:

"WHEREAS, It has pleased the all wise Creator to remove from our midst our honored brother and member, Dr. H. E. Cushing; therefore,

Resolved, That we, the members of the Champaign County Medical Society, hereby express our deep sorrow at the untimely removal of one so useful and beloved from our profession; that we extend to the wife and sons our heartfelt sympathy in this hour of their great bereavement in the loss of husband and father at the time of his greatest need and usefulness.

Resolved, That a copy of these resolutions be sent to the bereaved family, and that they also be placed upon the records of our society and given to the public.

DR. JOHN MARTEN,
DR. JOHN A. HOFFMAN,
DR. JAMES S. MASON,
Committee.

ILLINOIS STATE MEDICAL SOCIETY

SECTION OFFICERS AND COMMITTEES.

SECTION ONE.

S. E. Munson, Springfield.....Chairman
George Edwin Baxter, 1916 Evanston Ave., Chicago .....Secretary

SECTION TWO.

E. Wyllys Andrews, 100 State St., Chicago. .....Chairman
W. B. Helm, Rockford.....Secretary

COMMITTEE ON PUBLIC POLICY.

Robert B. Preble, Chairman.
Carl E. Black, Jacksonville.
J. W. Pettit, Ottawa.
The President and Secretary, ex-officio.

COMMITTEE ON MEDICAL LEGISLATION.

L. C. Taylor, Springfield.
M. S. Marcy, Peoria.
J. V. Fowler, Chicago.
The President and Secretary, ex-officio.

COMMITTEE ON MEDICAL EDUCATION.

Frank P. Norbury, Jacksonville.
J. F. Percy, Galesburg.
C. L. Mix, Chicago.

COMMITTEE ON SCIENTIFIC WORK.

The Section Officers.
The President and Secretary.

COUNTY SOCIETIES.

This list is corrected in accordance with the best information obtainable at the date of going to press. County Secretaries are requested to notify THE JOURNAL of any changes or errors.

Adams County.

J. H. Rice, Pres.....Quincy
Clarence A. Wells, Secy.....Quincy

Alexander County.

Samuel B. Cary, Pres.....Cairo
J. T. Walsh, Secy.....Cairo

Bond County.

John W. Warren, Pres.....Greenville
J. C. Wilson, Secy.....Greenville

Boone County.

R. W. McInnes, Pres.....Belvidere
R. H. Herbert, Secy.....Poplar Grove

Brown County.

S. J. Wilson, Pres.....Versailles
F. E. McGann, Secy.....Mt. Sterling

Bureau County.

J. C. White, Pres.....Seatonville
O. J. Flint, Secy.....Princeton

Calhoun County.

I. S. Berry, Pres.....Batchtown
Stephen Flatt, Secy.....Hardin

Carroll County.

G. W. Johnson, Pres.....Savanna
H. S. Metcalf, Secy.....Mt. Carroll

Cass County.

C. M. Hubbard, Pres.....Virginia
J. A. McGee, Secy.....Virginia

Champaign County.

J. C. Dodd, Pres.....Champaign
C. D. Gulick, Secy.....Urbana

Clark County.

R. Ryerson, Pres.....Martinsville
L. J. Wier, Secy.....Marshall

Clay County.

Geo. W. Steely, Pres.....Louisville
C. E. Duncan, Secy.....Flora

Christian County.

J. J. Conner, Pres.....Pana
D. D. Barr, Secy.....Taylorville

Clinton County.

A. N. Carter, Pres.....Trenton
J. Q. Roane, Secy.....Carlyle

Coles County.

N. C. Iknayan, Pres.....Charleston
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